



8165 E Kaiser Blvd. Anaheim, CA 92808  
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Report No: L091604011R01

Date: 11/3/2016



NVLAP LAB CODE 200927-0

**Report No:** L091604011R01

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

**Model Number:** GCJ0-15H-MV-CW-2R-XX-700

**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 GCJ0-15H-MV-CW-2R-XX-700. 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:** 9/21/16 - 9/21/16

**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>	GCJ0-15H-MV-CW-2R-XX-700	
<b>Driver Model Number:</b>	LITEON PA-1600-31SL	
<b>Total Lumens:</b>	4207.80	
<b>Input Voltage (VAC/60Hz):</b>	120.00	
<b>Input Current (Amp):</b>	0.30	
<b>Input Power (W):</b>	35.11	
<b>Input Power Factor:</b>	0.99	
<b>Current ATHD @ 120V(%):</b>	11%	
<b>Current ATHD @ 277V(%):</b>	15% (0.13A, 34.27W, 0.93PF)	
<b>Efficacy:</b>	120	
<b>Color Rendering Index (CRI):</b>	72	
<b>Correlated Color Temperature (K):</b>	4880	
<b>Chromaticity Coordinate x:</b>	0.3493	
<b>Chromaticity Coordinate y:</b>	0.3607	
<b>Ambient Temperature (°C):</b>	25.0	
<b>Stabilization Time (Hours):</b>	0:30	
<b>Total Operating Time (Hours):</b>	3:30	
<b>Off State Power(W):</b>	0.00	

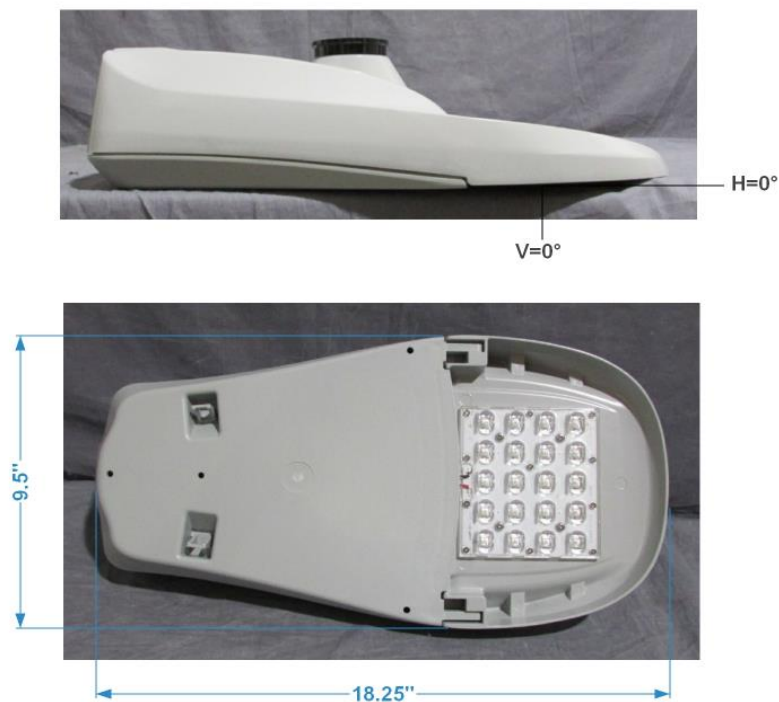
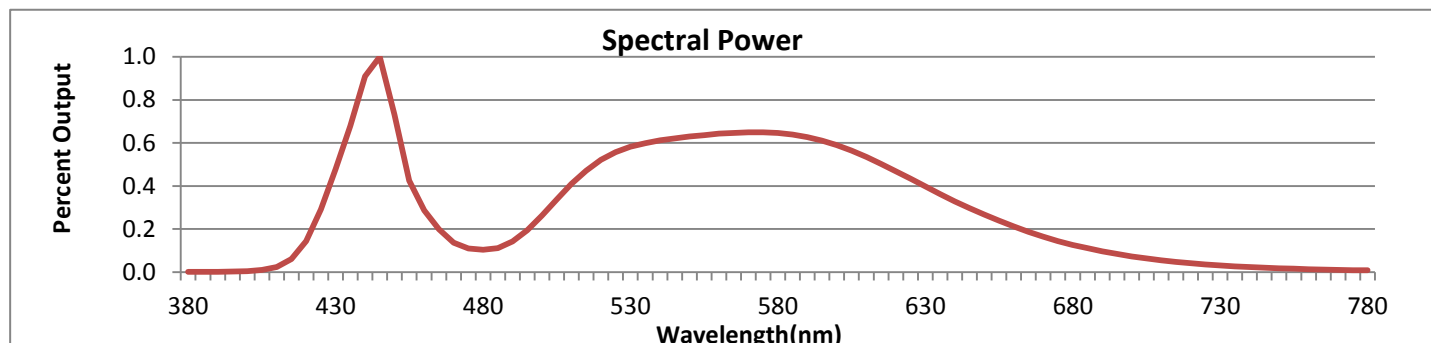


FIG. 1 LUMINAIRE



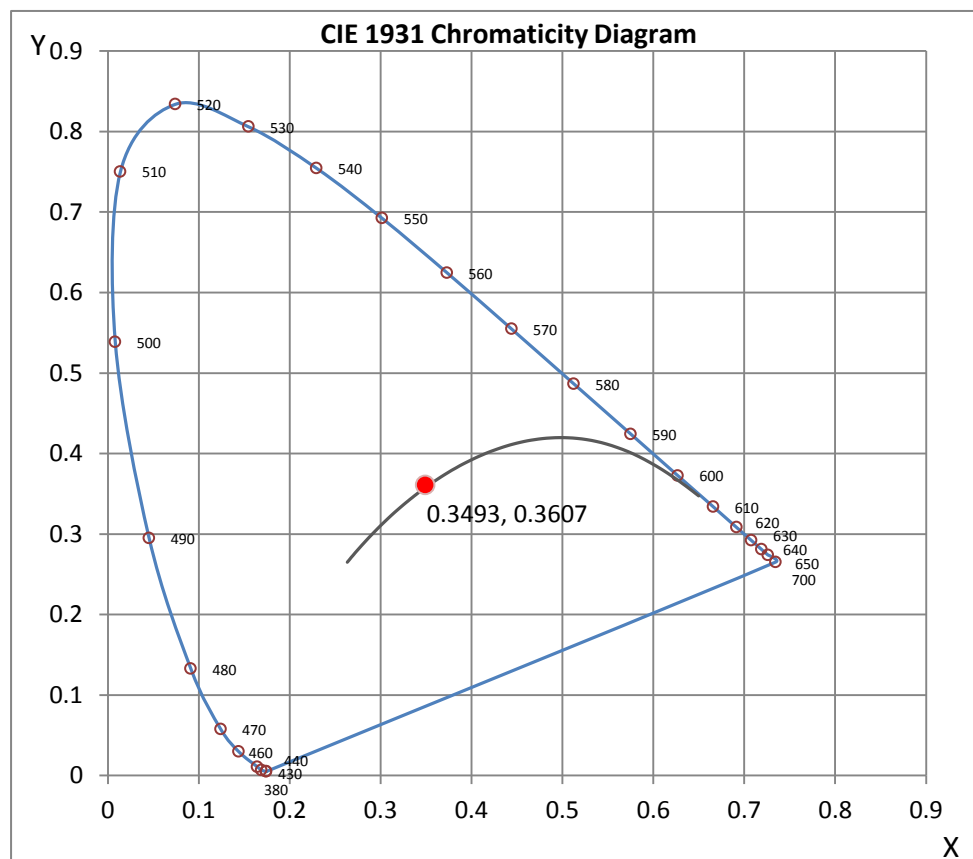
Wavelength	W/m <sup>2</sup> nm	440	0.9092	510	0.4097	580	0.6458	650	0.2666	720	0.0414
380	0.0011	450	0.7312	520	0.5212	590	0.6268	660	0.2117	730	0.0312
390	0.0017	460	0.2861	530	0.5825	600	0.5899	670	0.1643	740	0.0234
400	0.0046	470	0.1366	540	0.6122	610	0.5349	680	0.1263	750	0.0178
410	0.0239	480	0.1036	550	0.6294	620	0.4686	690	0.0965	760	0.0136
420	0.1440	490	0.1419	560	0.6430	630	0.3976	700	0.0729	770	0.0103
430	0.4790	500	0.2631	570	0.6499	640	0.3290	710	0.0547	780	0.0090

#### CRI & CCT

x	0.3493
y	0.3607
u'	0.2107
v'	0.4897
CRI	72.40
CCT	4880
Duv	0.00287

#### R Values

R1	71.06
R2	75.69
R3	79.65
R4	74.40
R5	71.39
R6	67.43
R7	79.96
R8	59.92
R9	-20.23
R10	42.85
R11	73.23
R12	46.44
R13	70.83
R14	88.07





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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 : L091604011.IES

### DESCRIPTIVE INFORMATION (From Photometric File)

IESNA:LM-63-2002  
[TEST] L091604011  
[TESTLAB] LIGHT LABORATORY, INC.  
[ISSUEDATE] 9/22/2016  
[MANUFAC] Leotek Electronics USA, LLC  
[LUMCAT] GCJ0-15H-MV-CW-2R-XX-700  
[LUMINAIRE] 18.25"L. X 9.5"W. X 4.5"H. LED STREET LIGHT  
[BALLASTCAT] LITEON PA-1600-31SL  
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND  
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.  
[\_INPUT] 120VAC, 35.11W  
[\_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	4208
Downward Total Efficiency	N.A. (absolute)
Total Luminaire Efficiency	N.A. (absolute)
Luminaire Efficacy Rating (LER)	120
Total Luminaire Watts	35.11
Ballast Factor	1.00
Upward Waste Light Ratio	0.00
Maximum Candela	3164
Maximum Candela Angle	75H 69V
Maximum Candela (<90 Degrees Vertical)	3164
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	319 (7.6% Luminaire Lumens)
Cutoff Classification (deprecated)	N.A. (absolute)

**IES ROAD REPORT**  
**PHOTOMETRIC FILENAME : L091604011.IES**

**LUMINAIRE CLASSIFICATION SYSTEM (LCS)**

	Lumens	% Lamp	% Luminaire
FL - Front-Low (0-30)	418.8	N.A.	10.0
FM - Front-Medium (30-60)	1891.3	N.A.	44.9
FH - Front-High (60-80)	1036.9	N.A.	24.6
FVH - Front-Very High (80-90)	14.4	N.A.	0.3
BL - Back-Low (0-30)	247.7	N.A.	5.9
BM - Back-Medium (30-60)	416.5	N.A.	9.9
BH - Back-High (60-80)	177.4	N.A.	4.2
BVH - Back-Very High (80-90)	4.8	N.A.	0.1
UL - Uplight-Low (90-100)	0.0	N.A.	0.0
UH - Uplight-High (100-180)	0.0	N.A.	0.0
Total	4207.8	N.A.	100.0
BUG Rating	B1-U0-G1		

**ZONAL LUMEN SUMMARY**

Zone	%
0-20	7.2
0-30	15.8
0-40	28.9
0-60	70.7
0-80	99.5
0-90	100
10-90	98.1
20-40	21.7
20-50	40.4
40-70	62.4
60-80	28.9
70-80	8.2
80-90	0.5
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**

<b>Vert. Angles</b>	<b>Horizontal Angles</b>									
	<b>0</b>	<b>5</b>	<b>10</b>	<b>15</b>	<b>20</b>	<b>25</b>	<b>30</b>	<b>35</b>	<b>40</b>	<b>45</b>
<b>0.0</b>	898	898	898	898	898	898	898	898	898	898
<b>0.5</b>	904	903	901	897	898	900	899	898	896	897
<b>1.0</b>	910	908	904	895	899	902	900	897	894	896
<b>1.5</b>	917	913	907	893	900	904	900	897	892	895
<b>2.0</b>	923	919	910	892	900	906	901	896	890	893
<b>2.5</b>	929	923	912	891	901	907	902	896	889	892
<b>3.0</b>	930	923	912	890	900	907	902	896	887	891
<b>3.5</b>	931	922	910	890	899	906	901	896	887	890
<b>4.0</b>	931	921	909	890	898	905	901	896	887	890
<b>4.5</b>	930	919	908	890	897	904	901	896	887	889
<b>5.0</b>	930	918	907	891	897	903	901	896	887	887
<b>5.5</b>	931	917	907	892	898	903	901	897	889	887
<b>6.0</b>	933	917	908	894	899	902	901	898	890	887
<b>6.5</b>	934	918	909	896	900	902	902	899	890	887
<b>7.0</b>	936	918	910	898	901	902	903	901	891	887
<b>7.5</b>	938	919	912	901	903	902	904	902	893	889
<b>8.0</b>	939	921	914	906	906	904	906	904	894	890
<b>8.5</b>	941	923	918	910	910	906	908	906	895	892
<b>9.0</b>	943	926	921	917	914	909	911	908	897	894
<b>9.5</b>	944	928	924	922	918	911	913	911	899	897
<b>10.0</b>	945	930	926	926	921	914	917	913	902	899
<b>10.5</b>	944	931	927	929	924	917	919	917	905	903
<b>11.0</b>	941	931	928	932	926	919	921	921	909	908
<b>11.5</b>	940	931	928	934	928	921	923	924	913	912
<b>12.0</b>	938	931	929	936	930	923	925	928	918	918
<b>12.5</b>	936	932	929	938	932	924	927	931	923	923
<b>13.0</b>	935	932	930	939	934	926	928	933	927	928
<b>13.5</b>	934	933	931	941	936	928	930	935	932	933
<b>14.0</b>	933	934	932	943	939	930	932	936	937	938
<b>14.5</b>	932	935	933	945	941	932	934	938	943	945
<b>15.0</b>	932	936	935	946	945	934	936	940	948	950
<b>15.5</b>	934	937	936	948	948	937	938	944	952	956
<b>16.0</b>	935	938	938	951	951	940	941	947	957	961
<b>16.5</b>	937	940	940	953	954	945	945	951	962	967
<b>17.0</b>	939	941	943	956	958	949	948	954	967	974
<b>17.5</b>	943	944	946	959	961	953	951	958	973	980
<b>18.0</b>	946	946	950	963	966	958	956	963	979	986
<b>18.5</b>	950	949	954	967	971	963	960	968	985	992
<b>19.0</b>	954	952	958	972	976	969	965	974	991	1000
<b>19.5</b>	958	955	963	977	982	976	972	980	998	1007
<b>20.0</b>	962	958	967	982	987	983	978	986	1005	1013
<b>20.5</b>	966	962	974	988	994	990	986	994	1011	1019
<b>21.0</b>	972	966	979	994	1001	999	994	1002	1018	1026
<b>21.5</b>	976	971	985	1001	1009	1008	1004	1010	1027	1033
<b>22.0</b>	981	976	991	1007	1016	1017	1013	1019	1034	1039
<b>22.5</b>	987	981	998	1014	1025	1027	1023	1029	1042	1046
<b>23.0</b>	993	987	1007	1023	1033	1037	1035	1039	1051	1055
<b>23.5</b>	1001	995	1016	1033	1042	1048	1047	1049	1062	1063
<b>24.0</b>	1008	1003	1027	1042	1051	1060	1060	1061	1072	1071
<b>24.5</b>	1016	1011	1036	1051	1061	1072	1072	1072	1084	1081
<b>25.0</b>	1025	1019	1046	1062	1072	1085	1085	1085	1094	1090
<b>25.5</b>	1033	1029	1055	1073	1084	1099	1099	1097	1105	1099
<b>26.0</b>	1041	1038	1064	1085	1097	1114	1114	1110	1117	1110

**IES ROAD REPORT**  
**PHOTOMETRIC FILENAME : L091604011.IES**

**CANDELA TABULATION - (Cont.)**

26.5	1050	1047	1072	1096	1110	1128	1129	1123	1129	1120
27.0	1059	1056	1082	1109	1123	1144	1144	1137	1142	1130
27.5	1068	1066	1090	1120	1138	1159	1160	1151	1155	1142
28.0	1075	1074	1099	1131	1151	1175	1178	1168	1171	1154
28.5	1084	1084	1110	1143	1166	1192	1196	1185	1186	1168
29.0	1092	1093	1119	1154	1180	1208	1213	1203	1203	1181
29.5	1099	1102	1129	1165	1195	1226	1232	1222	1220	1196
30.0	1109	1113	1140	1177	1210	1242	1251	1241	1238	1212
30.5	1118	1123	1150	1189	1225	1258	1269	1262	1258	1231
31.0	1128	1135	1160	1201	1239	1274	1288	1284	1279	1252
31.5	1139	1146	1172	1213	1255	1289	1308	1306	1301	1273
32.0	1150	1158	1183	1226	1271	1305	1327	1328	1322	1294
32.5	1162	1171	1196	1239	1286	1321	1345	1350	1345	1317
33.0	1175	1186	1209	1255	1303	1337	1365	1374	1368	1342
33.5	1189	1202	1223	1272	1319	1354	1384	1397	1392	1367
34.0	1202	1218	1237	1288	1336	1370	1403	1421	1416	1393
34.5	1217	1234	1252	1305	1353	1387	1422	1444	1440	1419
35.0	1232	1251	1267	1321	1369	1404	1442	1468	1465	1446
35.5	1248	1267	1284	1337	1387	1423	1462	1490	1491	1474
36.0	1264	1283	1301	1354	1404	1442	1480	1512	1518	1502
36.5	1281	1300	1317	1369	1422	1460	1500	1534	1544	1530
37.0	1299	1316	1335	1385	1440	1479	1520	1556	1569	1559
37.5	1315	1333	1351	1400	1458	1499	1540	1578	1595	1587
38.0	1332	1349	1368	1417	1477	1520	1564	1600	1619	1616
38.5	1349	1365	1385	1433	1496	1541	1589	1621	1643	1646
39.0	1366	1382	1401	1449	1515	1562	1613	1643	1667	1675
39.5	1383	1397	1418	1465	1533	1584	1638	1665	1690	1703
40.0	1398	1412	1433	1480	1551	1605	1663	1687	1714	1731
40.5	1412	1426	1448	1496	1566	1624	1687	1710	1736	1756
41.0	1424	1439	1462	1511	1580	1643	1710	1732	1757	1780
41.5	1437	1451	1475	1526	1593	1663	1732	1756	1779	1804
42.0	1447	1463	1487	1539	1606	1681	1754	1779	1801	1827
42.5	1456	1473	1498	1552	1618	1698	1775	1802	1824	1850
43.0	1464	1481	1506	1562	1632	1714	1795	1825	1847	1873
43.5	1469	1487	1513	1570	1644	1729	1813	1848	1869	1895
44.0	1474	1494	1519	1578	1657	1743	1831	1870	1893	1918
44.5	1477	1499	1524	1584	1668	1756	1847	1891	1916	1941
45.0	1480	1503	1527	1589	1677	1769	1862	1913	1939	1964
45.5	1482	1506	1529	1590	1684	1779	1876	1932	1962	1989
46.0	1483	1508	1530	1590	1688	1788	1887	1950	1985	2014
46.5	1483	1509	1530	1589	1692	1797	1897	1968	2006	2039
47.0	1481	1509	1529	1587	1694	1804	1907	1985	2027	2063
47.5	1478	1506	1526	1584	1696	1810	1915	2000	2048	2086
48.0	1470	1500	1520	1582	1699	1813	1920	2011	2067	2110
48.5	1460	1491	1510	1579	1700	1814	1925	2019	2085	2133
49.0	1449	1480	1501	1576	1701	1815	1930	2027	2102	2156
49.5	1437	1469	1491	1572	1702	1815	1933	2034	2119	2178
50.0	1422	1455	1480	1566	1702	1815	1935	2041	2134	2198
50.5	1404	1440	1470	1560	1702	1817	1938	2047	2148	2218
51.0	1385	1423	1459	1554	1701	1818	1941	2053	2159	2236
51.5	1364	1405	1448	1546	1699	1818	1943	2058	2169	2252
52.0	1342	1387	1437	1537	1695	1817	1944	2064	2179	2268
52.5	1318	1366	1423	1529	1691	1814	1946	2068	2186	2280
53.0	1293	1347	1410	1521	1684	1811	1948	2070	2189	2286
53.5	1267	1327	1395	1512	1674	1807	1950	2071	2190	2289
54.0	1239	1304	1378	1502	1664	1803	1954	2072	2189	2290



**IES ROAD REPORT**  
**PHOTOMETRIC FILENAME : L091604011.IES**

**CANDELA TABULATION - (Cont.)**

54.5	1209	1280	1359	1490	1651	1797	1959	2073	2188	2289
55.0	1179	1253	1337	1473	1638	1793	1969	2073	2185	2288
55.5	1149	1222	1311	1448	1626	1795	2004	2071	2180	2287
56.0	1118	1187	1282	1420	1610	1795	2042	2072	2173	2284
56.5	1088	1150	1248	1389	1590	1791	2067	2088	2162	2276
57.0	1049	1105	1208	1354	1564	1780	2076	2121	2152	2265
57.5	986	1044	1157	1316	1531	1763	2041	2208	2147	2244
58.0	901	962	1091	1271	1491	1741	1999	2301	2155	2224
58.5	753	815	976	1210	1446	1721	1987	2382	2206	2207
59.0	601	659	843	1123	1391	1693	1974	2437	2285	2203
59.5	500	542	683	952	1310	1636	1942	2411	2442	2242
60.0	419	443	532	766	1197	1562	1900	2354	2589	2305
60.5	364	381	447	605	984	1467	1843	2264	2620	2434
61.0	322	333	384	465	762	1345	1773	2162	2603	2557
61.5	293	301	336	393	603	1144	1674	2075	2521	2603
62.0	267	272	297	343	472	923	1547	1987	2423	2615
62.5	236	234	261	305	390	693	1343	1905	2349	2565
63.0	201	194	224	275	329	490	1115	1799	2266	2488
63.5	157	149	174	246	288	398	858	1611	2145	2381
64.0	115	110	129	217	257	339	621	1395	2003	2263
64.5	92	91	103	177	239	296	481	1154	1830	2154
65.0	78	80	85	140	224	264	379	917	1651	2042
65.5	72	76	79	114	202	237	319	711	1503	1925
66.0	70	74	77	95	180	216	276	532	1345	1797
66.5	67	71	74	88	153	198	243	417	1120	1634
67.0	65	69	71	84	127	185	216	329	884	1463
67.5	62	66	69	80	112	172	196	271	659	1296
68.0	60	63	66	75	101	161	180	229	463	1135
68.5	58	61	63	71	91	147	164	203	364	988
69.0	56	60	61	67	84	135	152	184	298	839
69.5	55	59	60	64	79	121	140	166	249	655
70.0	54	58	58	62	75	108	131	149	212	483
70.5	53	57	57	60	72	99	121	135	184	372
71.0	53	56	56	59	70	91	114	121	162	288
71.5	51	55	55	57	66	84	106	112	145	240
72.0	50	54	54	56	64	79	99	105	133	207
72.5	49	53	52	55	62	74	92	99	119	179
73.0	48	53	51	53	61	70	86	93	108	157
73.5	47	52	50	52	59	66	81	88	99	140
74.0	45	51	48	50	57	63	78	83	90	127
74.5	44	51	47	49	55	59	74	79	84	115
75.0	42	51	46	48	53	56	70	76	79	106
75.5	40	51	45	47	51	53	65	72	73	95
76.0	38	50	44	47	49	51	61	67	67	87
76.5	37	48	43	46	47	49	58	63	63	81
77.0	35	45	42	45	46	47	56	59	60	77
77.5	34	42	40	44	44	45	53	56	57	70
78.0	33	38	38	42	43	43	50	53	54	62
78.5	32	36	37	39	40	42	48	50	51	55
79.0	31	35	36	37	38	39	46	48	48	50
79.5	30	34	35	36	37	37	44	45	44	45
80.0	29	34	34	34	35	36	40	42	39	40
80.5	29	34	34	33	34	35	38	38	36	36
81.0	28	34	33	31	32	33	36	35	33	33
81.5	28	34	32	29	30	32	34	32	30	30
82.0	27	34	31	27	29	31	32	29	27	28

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**CANDELA TABULATION - (Cont.)**

82.5	26	35	30	26	27	30	30	27	25	26
83.0	25	36	29	23	25	28	27	24	23	23
83.5	25	37	28	21	23	25	24	21	20	21
84.0	23	38	27	19	20	23	21	19	18	19
84.5	22	39	26	17	18	20	19	17	16	17
85.0	20	38	24	13	16	17	16	15	13	15
85.5	17	32	20	11	12	15	13	12	12	12
86.0	13	25	16	9	10	11	11	10	11	11
86.5	9	17	11	7	8	9	9	9	9	10
87.0	6	9	7	5	6	7	7	8	8	9
87.5	3	3	3	4	4	5	6	6	7	8
88.0	2	1	2	3	3	4	5	5	6	7
88.5	1	0	1	2	3	3	4	4	5	6
89.0	1	0	1	2	2	2	3	3	4	4
89.5	1	0	1	1	1	1	2	2	2	2
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	898	898	898	898	898	898	898	898	898	898
0.5	898	899	898	898	898	898	897	897	896	896
1.0	899	899	898	898	898	898	896	896	893	893
1.5	899	900	898	897	898	898	896	894	891	890
2.0	899	901	898	897	897	898	895	893	887	887
2.5	899	901	898	897	897	897	894	891	885	884
3.0	898	901	897	896	897	895	892	889	882	881
3.5	897	900	896	895	896	893	890	885	879	879
4.0	896	899	895	893	895	891	889	883	877	876
4.5	895	899	894	892	894	889	886	880	874	873
5.0	894	898	893	891	893	886	884	877	871	870
5.5	894	897	891	889	891	884	881	874	867	866
6.0	894	896	890	887	890	883	879	871	864	862
6.5	894	895	889	885	887	881	877	868	861	857
7.0	894	895	886	884	885	880	875	865	856	853
7.5	895	894	885	883	883	878	872	862	853	848
8.0	895	894	884	881	881	877	870	858	850	844
8.5	896	894	883	880	880	875	867	855	847	840
9.0	897	894	883	880	878	874	865	852	844	836
9.5	899	895	882	879	877	873	862	850	841	832
10.0	900	895	883	879	876	872	859	848	838	829
10.5	903	896	884	879	876	872	858	847	837	826
11.0	906	898	885	880	877	872	858	847	836	825
11.5	909	899	887	882	878	873	857	846	836	823
12.0	912	901	890	883	879	873	857	847	835	822
12.5	917	904	893	885	881	874	857	847	835	822
13.0	922	908	897	889	883	876	859	848	836	822
13.5	927	913	901	892	886	878	862	849	837	822
14.0	932	919	905	896	890	880	864	850	838	823
14.5	938	925	910	900	893	882	867	852	839	824
15.0	945	931	917	904	897	884	870	854	841	826
15.5	950	938	924	909	901	887	873	856	843	827
16.0	957	946	932	916	905	891	876	858	845	828
16.5	963	953	940	922	909	893	879	862	847	830
17.0	969	961	950	929	913	897	882	865	849	831
17.5	976	968	959	936	919	900	886	868	852	834

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**CANDELA TABULATION - (Cont.)**

18.0	982	976	967	946	925	904	890	871	854	836
18.5	988	984	977	955	931	909	893	875	857	838
19.0	994	991	985	964	937	913	896	878	861	841
19.5	1001	999	994	975	944	919	900	882	864	843
20.0	1008	1007	1003	984	950	924	903	886	868	845
20.5	1015	1013	1012	993	957	928	908	891	871	847
21.0	1022	1020	1020	1003	963	932	913	895	875	850
21.5	1030	1028	1029	1011	971	937	918	899	879	852
22.0	1037	1035	1037	1020	978	943	923	903	882	855
22.5	1045	1041	1045	1030	986	948	928	907	886	857
23.0	1053	1048	1053	1039	995	955	933	912	890	861
23.5	1060	1055	1060	1048	1007	961	938	917	894	865
24.0	1067	1062	1067	1058	1017	969	944	921	897	868
24.5	1074	1069	1073	1067	1028	977	949	926	901	871
25.0	1083	1076	1081	1076	1039	985	955	931	905	874
25.5	1091	1084	1087	1084	1048	993	961	936	909	877
26.0	1100	1091	1093	1091	1058	1003	969	940	914	880
26.5	1110	1099	1099	1098	1067	1012	977	947	920	883
27.0	1119	1107	1107	1105	1076	1021	985	952	925	886
27.5	1129	1116	1114	1112	1086	1030	992	957	930	890
28.0	1141	1126	1121	1120	1093	1038	1000	964	935	894
28.5	1152	1137	1129	1127	1099	1045	1007	972	940	897
29.0	1165	1148	1139	1135	1107	1053	1014	979	946	900
29.5	1178	1159	1147	1143	1114	1061	1020	985	950	904
30.0	1192	1172	1156	1151	1121	1068	1027	992	955	907
30.5	1207	1184	1167	1159	1129	1077	1031	998	959	910
31.0	1225	1198	1177	1169	1138	1086	1034	1003	962	913
31.5	1242	1211	1189	1177	1147	1095	1038	1007	966	917
32.0	1260	1225	1199	1186	1156	1104	1041	1012	969	920
32.5	1280	1239	1211	1197	1166	1114	1045	1016	974	923
33.0	1301	1257	1225	1206	1175	1122	1050	1020	980	927
33.5	1322	1275	1238	1218	1184	1131	1057	1025	985	930
34.0	1344	1292	1254	1228	1195	1140	1062	1028	991	934
34.5	1368	1312	1269	1239	1205	1149	1068	1032	998	937
35.0	1391	1332	1285	1252	1215	1157	1074	1036	1003	940
35.5	1417	1355	1305	1266	1228	1168	1081	1040	1007	944
36.0	1442	1378	1324	1282	1240	1178	1087	1045	1010	947
36.5	1469	1403	1345	1299	1254	1190	1093	1050	1013	949
37.0	1496	1429	1367	1315	1267	1200	1100	1056	1016	952
37.5	1524	1455	1389	1332	1281	1211	1109	1061	1019	955
38.0	1554	1483	1413	1351	1296	1225	1119	1068	1023	958
38.5	1585	1512	1437	1371	1313	1238	1131	1074	1028	960
39.0	1616	1541	1462	1391	1330	1252	1144	1083	1033	963
39.5	1648	1572	1487	1413	1347	1265	1157	1090	1037	966
40.0	1679	1603	1514	1435	1365	1280	1170	1097	1042	971
40.5	1712	1636	1542	1457	1383	1294	1183	1104	1048	974
41.0	1744	1670	1572	1481	1401	1309	1196	1112	1055	978
41.5	1775	1705	1602	1506	1421	1324	1208	1120	1062	982
42.0	1807	1741	1632	1531	1441	1340	1222	1127	1068	986
42.5	1838	1776	1664	1557	1462	1356	1235	1136	1074	990
43.0	1868	1811	1697	1585	1483	1372	1248	1144	1081	993
43.5	1899	1848	1732	1613	1506	1390	1261	1152	1087	995
44.0	1928	1883	1768	1642	1529	1408	1275	1162	1093	999
44.5	1957	1918	1803	1672	1553	1426	1289	1171	1099	1001
45.0	1985	1954	1838	1702	1577	1445	1304	1181	1105	1005
45.5	2012	1989	1876	1733	1602	1465	1318	1192	1112	1010

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**CANDELA TABULATION - (Cont.)**

46.0	2037	2022	1912	1766	1628	1484	1334	1202	1119	1016
46.5	2061	2056	1948	1798	1652	1505	1350	1212	1126	1022
47.0	2086	2088	1985	1830	1678	1526	1367	1224	1133	1029
47.5	2110	2120	2020	1862	1704	1547	1385	1236	1141	1035
48.0	2133	2150	2054	1894	1729	1569	1404	1250	1148	1040
48.5	2156	2178	2088	1927	1755	1592	1424	1263	1155	1044
49.0	2178	2205	2121	1959	1781	1616	1446	1278	1163	1049
49.5	2198	2230	2153	1990	1807	1640	1468	1293	1171	1054
50.0	2219	2253	2183	2021	1833	1664	1491	1310	1181	1060
50.5	2239	2274	2210	2051	1859	1688	1514	1329	1195	1067
51.0	2258	2293	2235	2080	1885	1713	1539	1347	1210	1076
51.5	2275	2311	2259	2108	1911	1738	1565	1368	1226	1085
52.0	2292	2326	2282	2135	1936	1763	1592	1389	1241	1093
52.5	2307	2340	2301	2161	1962	1788	1619	1410	1256	1102
53.0	2319	2349	2317	2182	1989	1814	1650	1429	1268	1110
53.5	2328	2356	2330	2201	2016	1842	1682	1450	1280	1118
54.0	2337	2361	2342	2219	2042	1870	1713	1471	1290	1126
54.5	2343	2365	2352	2236	2069	1899	1744	1492	1302	1133
55.0	2346	2367	2361	2252	2094	1927	1775	1514	1313	1140
55.5	2343	2366	2368	2268	2116	1954	1799	1537	1326	1145
56.0	2337	2362	2372	2284	2139	1983	1825	1563	1339	1151
56.5	2330	2357	2372	2300	2165	2015	1860	1599	1363	1166
57.0	2321	2350	2371	2316	2192	2049	1897	1635	1385	1179
57.5	2305	2340	2367	2327	2220	2086	1932	1665	1395	1179
58.0	2290	2328	2364	2339	2249	2125	1967	1692	1403	1176
58.5	2276	2317	2360	2351	2277	2161	2004	1709	1417	1171
59.0	2270	2310	2360	2369	2309	2198	2046	1731	1431	1168
59.5	2287	2321	2376	2395	2345	2238	2096	1790	1454	1181
60.0	2313	2340	2398	2427	2386	2282	2148	1849	1474	1194
60.5	2356	2377	2435	2477	2442	2334	2192	1875	1478	1193
61.0	2399	2411	2474	2529	2502	2393	2239	1899	1482	1190
61.5	2421	2425	2500	2572	2561	2459	2295	1938	1506	1191
62.0	2437	2429	2518	2614	2623	2531	2358	1986	1535	1192
62.5	2462	2418	2523	2655	2699	2620	2442	2055	1570	1192
63.0	2480	2402	2522	2694	2777	2714	2528	2123	1601	1189
63.5	2475	2393	2507	2727	2857	2813	2600	2158	1606	1184
64.0	2451	2384	2489	2754	2934	2911	2669	2185	1600	1175
64.5	2379	2391	2479	2770	3006	3001	2743	2213	1565	1145
65.0	2293	2395	2473	2782	3069	3079	2810	2241	1528	1111
65.5	2205	2392	2483	2790	3105	3120	2850	2275	1510	1075
66.0	2108	2372	2488	2791	3126	3144	2873	2299	1498	1038
66.5	1992	2302	2470	2779	3127	3138	2856	2274	1486	991
67.0	1869	2211	2430	2755	3115	3125	2836	2248	1481	952
67.5	1755	2093	2329	2712	3084	3124	2852	2263	1498	954
68.0	1634	1959	2208	2656	3042	3129	2885	2307	1535	973
68.5	1487	1801	2073	2584	2998	3148	2961	2438	1639	1026
69.0	1328	1634	1930	2495	2951	3164	3034	2565	1744	1078
69.5	1147	1456	1772	2368	2912	3156	3054	2594	1786	1095
70.0	967	1285	1619	2234	2865	3135	3053	2598	1817	1105
70.5	807	1147	1501	2132	2780	3090	3039	2610	1861	1124
71.0	657	1019	1389	2030	2689	3035	3007	2608	1902	1146
71.5	526	893	1272	1910	2622	2976	2943	2586	1936	1181
72.0	411	768	1151	1782	2547	2900	2849	2530	1939	1195
72.5	324	648	1023	1648	2435	2778	2702	2387	1840	1116
73.0	255	531	896	1507	2299	2622	2515	2206	1710	1010
73.5	215	428	770	1351	2108	2392	2242	1970	1563	894

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**CANDELA TABULATION - (Cont.)**

<b>74.0</b>	188	335	646	1184	1901	2134	1948	1727	1421	786
<b>74.5</b>	168	271	522	982	1693	1853	1662	1518	1322	732
<b>75.0</b>	153	220	407	786	1483	1582	1400	1327	1228	679
<b>75.5</b>	137	187	321	646	1262	1381	1241	1186	1114	581
<b>76.0</b>	121	162	249	526	1061	1209	1113	1057	989	479
<b>76.5</b>	106	141	201	433	947	1085	1001	921	847	398
<b>77.0</b>	92	124	165	354	855	972	884	780	700	324
<b>77.5</b>	79	106	143	294	762	844	721	607	545	258
<b>78.0</b>	66	91	128	244	670	713	559	447	405	197
<b>78.5</b>	59	80	115	207	561	570	439	361	336	140
<b>79.0</b>	53	71	103	175	456	440	339	295	281	90
<b>79.5</b>	49	61	87	148	368	372	279	227	202	64
<b>80.0</b>	45	53	73	124	294	319	230	167	130	49
<b>80.5</b>	40	47	62	102	242	253	180	126	93	38
<b>81.0</b>	37	43	52	82	198	190	134	93	69	32
<b>81.5</b>	34	38	45	65	161	132	92	66	51	29
<b>82.0</b>	31	34	37	51	129	79	57	46	37	27
<b>82.5</b>	29	32	32	39	101	37	29	29	29	26
<b>83.0</b>	26	28	28	32	79	22	19	23	24	25
<b>83.5</b>	23	25	25	27	61	17	16	21	23	24
<b>84.0</b>	21	22	22	23	46	17	17	21	23	23
<b>84.5</b>	18	19	20	21	33	20	20	23	24	23
<b>85.0</b>	16	17	19	20	24	23	24	25	25	23
<b>85.5</b>	15	16	17	18	20	22	23	24	24	22
<b>86.0</b>	12	15	16	17	17	21	21	23	23	21
<b>86.5</b>	11	12	15	16	16	19	20	22	22	20
<b>87.0</b>	10	12	13	15	16	18	19	21	21	19
<b>87.5</b>	9	11	12	15	16	17	18	19	19	17
<b>88.0</b>	8	9	10	12	13	15	16	16	16	15
<b>88.5</b>	6	7	8	9	11	11	12	12	12	11
<b>89.0</b>	5	5	6	7	8	8	8	9	8	7
<b>89.5</b>	3	3	3	4	4	5	5	5	4	4
<b>90.0</b>	0	0	0	0	0	0	0	0	0	0

<b>Vert. Angles</b>	<b>Horizontal Angles</b>									
	<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>	898	898	898	898	898	898	898	898	898	898
<b>0.5</b>	896	895	896	895	895	895	895	895	894	893
<b>1.0</b>	894	893	895	893	891	892	893	891	891	886
<b>1.5</b>	891	890	893	890	887	889	890	887	886	880
<b>2.0</b>	889	886	891	886	883	885	886	883	882	874
<b>2.5</b>	885	884	889	883	879	881	882	879	877	868
<b>3.0</b>	882	881	885	880	875	876	877	873	870	859
<b>3.5</b>	878	878	881	876	870	871	870	866	862	852
<b>4.0</b>	875	875	877	871	866	865	864	858	853	843
<b>4.5</b>	871	872	873	867	861	858	856	851	844	835
<b>5.0</b>	867	868	868	862	855	851	848	843	835	825
<b>5.5</b>	862	863	863	856	849	843	839	835	825	815
<b>6.0</b>	857	857	856	850	843	835	829	825	816	804
<b>6.5</b>	852	852	851	845	837	826	820	816	805	793
<b>7.0</b>	848	846	845	839	829	817	810	807	795	783
<b>7.5</b>	843	841	839	832	822	809	799	797	785	771
<b>8.0</b>	839	835	832	826	815	799	790	788	774	759
<b>8.5</b>	835	829	827	820	808	790	780	777	763	746
<b>9.0</b>	830	824	821	814	799	782	770	767	752	733

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**CANDELA TABULATION - (Cont.)**

9.5	826	819	816	807	792	772	760	757	740	720
10.0	822	815	811	800	785	763	750	746	729	708
10.5	819	811	805	795	777	755	740	734	716	694
11.0	817	808	801	789	770	745	731	721	704	681
11.5	815	805	796	784	764	737	721	710	691	668
12.0	813	803	792	779	758	729	712	698	679	655
12.5	812	801	789	774	752	720	702	685	665	643
13.0	811	799	786	769	745	713	692	674	653	629
13.5	811	798	784	765	739	705	683	662	640	617
14.0	811	797	782	761	733	698	674	652	628	604
14.5	812	796	780	757	727	690	664	640	617	592
15.0	812	795	779	753	721	683	655	630	604	580
15.5	812	795	775	749	716	677	647	620	593	568
16.0	813	794	773	746	711	671	639	609	581	556
16.5	813	793	770	743	707	664	631	599	571	544
17.0	814	793	768	740	702	659	624	589	559	532
17.5	814	792	765	737	696	653	616	578	549	521
18.0	815	792	764	734	691	647	608	570	539	510
18.5	816	791	762	730	685	640	600	561	528	497
19.0	816	790	761	726	680	634	593	552	518	486
19.5	817	790	759	722	675	628	585	544	508	474
20.0	818	789	757	718	668	622	578	536	497	463
20.5	819	788	755	714	664	617	571	526	487	453
21.0	821	787	753	710	660	611	565	518	477	441
21.5	822	786	749	705	656	606	558	510	467	431
22.0	823	785	746	701	651	602	553	501	458	420
22.5	824	785	744	696	647	597	546	493	448	410
23.0	826	784	742	692	643	591	539	485	439	400
23.5	827	784	739	688	637	585	531	475	430	390
24.0	828	784	737	685	632	579	524	467	420	381
24.5	830	784	735	681	627	573	516	458	411	372
25.0	831	784	734	677	622	567	508	449	402	362
25.5	834	785	733	674	617	559	499	440	392	355
26.0	836	786	732	670	611	552	491	432	383	348
26.5	838	787	731	665	606	545	482	422	373	340
27.0	840	788	730	661	602	538	473	414	364	334
27.5	842	789	728	657	597	531	464	405	355	328
28.0	844	788	726	654	592	524	456	395	349	324
28.5	845	786	722	651	586	517	447	385	343	319
29.0	846	785	719	649	581	510	438	375	336	315
29.5	847	784	716	646	576	502	430	365	331	311
30.0	849	783	714	643	571	495	420	356	325	307
30.5	850	784	713	639	566	487	411	349	321	304
31.0	852	785	713	637	562	479	402	343	316	300
31.5	853	787	713	634	556	469	392	335	311	297
32.0	855	788	713	631	552	461	383	330	307	294
32.5	857	789	712	628	546	453	374	324	303	291
33.0	859	789	710	625	541	445	365	319	300	288
33.5	862	788	707	622	535	437	357	313	296	285
34.0	864	787	704	619	527	430	349	309	293	282
34.5	866	786	701	614	521	422	342	305	290	279
35.0	868	785	698	610	514	414	334	301	286	277
35.5	870	784	695	606	506	405	327	297	283	274
36.0	872	783	692	602	497	395	322	293	280	271
36.5	873	783	690	597	489	385	316	290	277	268
37.0	875	782	688	592	481	376	309	285	275	265

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

37.5	876	782	686	586	471	365	304	282	272	262
38.0	877	783	684	580	461	355	298	278	269	257
38.5	878	784	682	575	452	344	293	275	265	253
39.0	878	785	681	569	441	333	288	272	262	248
39.5	879	786	679	562	431	323	281	269	258	244
40.0	880	786	676	555	420	313	277	266	254	239
40.5	881	786	673	547	410	305	273	262	250	234
41.0	883	785	668	539	399	299	269	258	246	228
41.5	885	784	664	530	388	293	265	254	242	223
42.0	886	783	660	522	378	286	262	251	238	218
42.5	889	782	656	513	366	280	257	247	233	212
43.0	889	781	652	504	357	275	253	243	227	206
43.5	890	779	649	496	347	270	250	239	222	199
44.0	890	776	645	487	336	265	246	235	216	194
44.5	891	774	640	477	327	260	243	229	211	188
45.0	892	773	635	467	317	254	239	225	206	182
45.5	896	774	630	454	305	248	235	221	199	176
46.0	900	776	624	440	294	243	230	217	193	171
46.5	905	779	617	426	282	238	226	213	188	167
47.0	909	780	609	411	271	233	222	208	182	162
47.5	913	781	602	397	261	227	217	203	176	158
48.0	916	779	592	383	252	222	213	198	172	154
48.5	917	774	580	370	244	217	208	193	168	149
49.0	918	771	569	357	237	213	203	188	164	146
49.5	919	767	556	345	229	208	198	183	160	142
50.0	921	763	545	332	222	203	193	177	156	139
50.5	924	758	536	321	216	198	189	172	152	136
51.0	928	753	526	309	210	193	184	167	147	133
51.5	932	746	517	299	203	189	179	162	143	130
52.0	935	741	508	289	197	184	174	157	140	128
52.5	939	737	498	278	192	179	169	153	136	125
53.0	943	734	491	270	186	173	165	147	133	121
53.5	945	732	484	262	181	168	160	143	130	118
54.0	947	730	475	253	174	163	156	139	127	115
54.5	948	727	467	245	169	159	151	135	125	113
55.0	947	723	458	237	164	154	146	131	121	110
55.5	937	717	445	225	160	149	142	128	118	107
56.0	930	709	430	214	155	145	138	125	114	104
56.5	935	690	406	200	151	141	134	120	111	102
57.0	943	673	384	188	146	137	130	117	107	100
57.5	943	672	379	182	143	133	125	113	105	99
58.0	938	672	377	176	139	130	120	109	102	98
58.5	925	664	363	169	134	127	117	106	100	95
59.0	914	652	347	161	130	124	114	103	98	93
59.5	920	629	324	154	126	120	110	99	95	91
60.0	927	607	301	146	122	117	105	95	93	89
60.5	919	601	285	143	119	114	102	93	91	88
61.0	908	597	273	139	116	111	99	90	89	86
61.5	902	585	267	133	113	108	95	89	87	84
62.0	896	571	262	127	109	105	93	87	84	83
62.5	886	556	252	124	106	102	89	84	82	81
63.0	876	541	241	121	104	99	85	81	79	79
63.5	865	526	222	116	100	94	83	78	77	77
64.0	849	510	206	110	97	91	80	75	74	75
64.5	822	488	201	106	93	88	77	73	72	73
65.0	788	464	198	102	91	85	74	70	69	71

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CANDELA TABULATION - (Cont.)

65.5	742	433	187	99	88	81	70	66	65	69
66.0	695	401	172	95	85	78	66	63	63	66
66.5	661	367	158	92	81	75	63	61	61	64
67.0	633	340	146	88	78	72	60	58	58	62
67.5	622	336	145	85	76	67	56	56	56	59
68.0	614	335	145	82	73	64	53	54	54	57
68.5	612	320	137	79	70	61	50	51	52	55
69.0	607	303	127	77	66	58	48	48	50	53
69.5	588	292	121	75	64	55	45	45	47	51
70.0	566	283	116	73	61	52	43	42	45	48
70.5	562	282	116	70	57	49	40	39	42	46
71.0	549	279	115	66	53	47	38	37	38	43
71.5	491	264	109	62	50	45	37	35	36	40
72.0	425	245	101	58	48	44	36	33	33	37
72.5	365	230	95	55	45	42	34	31	31	34
73.0	308	218	91	52	43	39	33	30	29	31
73.5	248	216	91	49	40	37	31	28	27	29
74.0	193	213	91	45	38	35	29	26	26	26
74.5	155	203	86	42	36	34	28	25	24	24
75.0	126	192	80	39	34	32	26	23	22	23
75.5	106	174	75	38	33	30	25	21	21	22
76.0	89	156	70	37	31	28	24	20	19	20
76.5	70	134	62	35	30	27	22	19	18	19
77.0	53	112	54	33	29	26	20	17	17	17
77.5	46	93	46	30	27	24	19	16	16	16
78.0	40	76	39	28	26	22	17	16	15	15
78.5	36	66	35	27	24	21	16	15	13	13
79.0	34	59	33	25	22	19	16	13	12	12
79.5	32	49	30	23	21	18	15	12	11	11
80.0	30	38	27	22	20	17	13	11	10	10
80.5	28	33	25	21	18	16	12	10	9	9
81.0	27	29	23	19	17	15	12	10	9	8
81.5	25	26	22	18	16	13	11	9	8	7
82.0	24	23	20	17	15	12	10	8	7	6
82.5	23	21	19	16	13	11	10	8	6	5
83.0	22	20	18	16	13	11	9	7	6	5
83.5	22	19	17	15	12	10	9	7	6	5
84.0	21	19	17	15	11	10	8	7	6	5
84.5	21	18	16	13	11	9	8	6	5	4
85.0	20	18	16	13	11	9	7	6	5	4
85.5	19	17	16	13	10	9	7	6	4	4
86.0	18	17	15	12	10	9	7	5	4	3
86.5	18	16	15	12	10	9	6	4	3	2
87.0	16	15	13	12	10	8	6	4	3	2
87.5	15	13	12	11	10	8	5	3	2	1
88.0	12	11	10	9	8	7	4	3	2	1
88.5	9	8	8	7	6	5	3	2	1	1
89.0	6	6	5	5	4	3	2	1	1	1
89.5	3	3	3	2	2	2	1	1	1	0
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	898	898	898	898	898	898	898
0.5	891	890	891	891	890	887	886



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**CANDELA TABULATION - (Cont.)**

1.0	882	881	884	883	881	877	875
1.5	874	873	877	876	873	866	864
2.0	866	864	869	868	865	854	851
2.5	857	855	861	859	855	843	839
3.0	849	846	851	849	845	832	828
3.5	841	838	842	839	835	821	818
4.0	831	829	831	828	824	811	807
4.5	823	820	821	817	813	799	796
5.0	813	811	810	807	801	788	784
5.5	802	800	798	795	790	775	771
6.0	791	790	786	784	777	763	758
6.5	780	779	773	772	765	749	743
7.0	768	767	761	761	752	737	730
7.5	757	756	748	748	738	723	715
8.0	744	743	735	736	725	710	701
8.5	732	730	721	721	710	696	686
9.0	719	716	708	708	695	682	673
9.5	707	704	693	693	681	668	658
10.0	694	689	680	680	665	654	644
10.5	681	676	665	665	651	638	629
11.0	667	661	651	650	636	623	616
11.5	654	648	636	635	621	606	602
12.0	640	633	622	621	606	591	588
12.5	627	619	607	605	591	575	574
13.0	614	605	593	591	576	561	559
13.5	601	591	578	575	561	545	544
14.0	588	576	565	559	546	530	529
14.5	575	563	550	544	530	516	514
15.0	562	548	535	528	516	501	499
15.5	548	534	520	513	499	486	483
16.0	535	518	504	496	483	470	467
16.5	522	503	489	480	466	455	450
17.0	509	489	473	464	449	439	435
17.5	495	474	458	447	433	425	419
18.0	482	459	441	431	416	409	404
18.5	468	444	426	414	401	394	388
19.0	455	430	411	398	385	379	374
19.5	442	416	397	382	371	365	360
20.0	430	402	382	367	357	352	347
20.5	418	389	370	356	346	342	337
21.0	407	378	359	345	335	332	328
21.5	397	366	348	335	327	324	319
22.0	386	356	338	326	318	316	311
22.5	376	347	329	318	310	308	304
23.0	366	338	322	311	304	302	298
23.5	358	332	317	305	298	296	293
24.0	350	326	310	300	293	291	289
24.5	343	320	305	296	289	285	283
25.0	335	315	301	292	283	281	279
25.5	329	309	297	288	279	276	275
26.0	324	305	293	282	275	271	270
26.5	319	302	289	279	271	267	266
27.0	313	298	285	275	267	263	262
27.5	309	295	282	271	263	257	257
28.0	306	292	279	268	260	254	253
28.5	303	290	276	265	256	250	250

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

29.0	300	286	273	262	252	246	247
29.5	297	283	270	260	249	243	243
30.0	295	281	268	256	246	240	240
30.5	291	278	265	253	243	236	237
31.0	288	275	263	250	240	233	233
31.5	284	272	260	248	237	228	229
32.0	281	270	257	245	234	225	225
32.5	278	267	254	242	229	221	221
33.0	276	264	251	239	225	216	216
33.5	273	261	248	236	220	211	211
34.0	271	258	245	231	216	204	204
34.5	269	255	242	228	211	199	198
35.0	266	252	238	224	206	193	193
35.5	263	248	233	218	200	188	187
36.0	258	244	227	213	194	183	181
36.5	255	240	222	207	189	177	175
37.0	251	235	216	200	184	172	169
37.5	247	230	210	194	177	167	163
38.0	241	224	204	188	172	162	158
38.5	236	218	199	183	166	156	152
39.0	229	212	193	176	161	151	146
39.5	223	204	188	171	155	145	141
40.0	217	198	183	165	149	140	136
40.5	212	193	176	160	144	136	131
41.0	206	187	171	155	140	131	127
41.5	200	182	165	149	135	127	122
42.0	194	175	160	144	131	122	118
42.5	189	170	155	139	127	118	114
43.0	184	165	149	134	122	114	111
43.5	179	160	144	130	118	111	108
44.0	173	156	140	126	115	108	105
44.5	168	151	136	122	112	106	103
45.0	163	145	132	118	110	103	101
45.5	158	141	128	116	107	101	99
46.0	153	137	125	114	106	100	97
46.5	148	133	120	112	104	98	94
47.0	143	129	117	110	102	97	93
47.5	139	125	115	108	101	94	91
48.0	136	122	113	106	99	92	90
48.5	133	119	111	104	97	90	88
49.0	131	117	109	102	94	88	86
49.5	128	115	108	101	92	86	84
50.0	125	113	106	99	90	84	82
50.5	122	111	104	97	89	82	80
51.0	119	109	102	94	87	80	78
51.5	116	106	99	91	86	79	76
52.0	113	104	97	89	84	77	74
52.5	111	101	94	87	83	75	73
53.0	108	99	92	86	81	74	71
53.5	106	97	90	84	79	72	70
54.0	104	95	88	82	78	71	69
54.5	102	93	86	81	76	70	67
55.0	100	91	84	79	75	69	67
55.5	98	89	82	78	73	67	66
56.0	97	88	81	77	72	66	65
56.5	94	86	80	75	70	65	64

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CANDELA TABULATION - (Cont.)

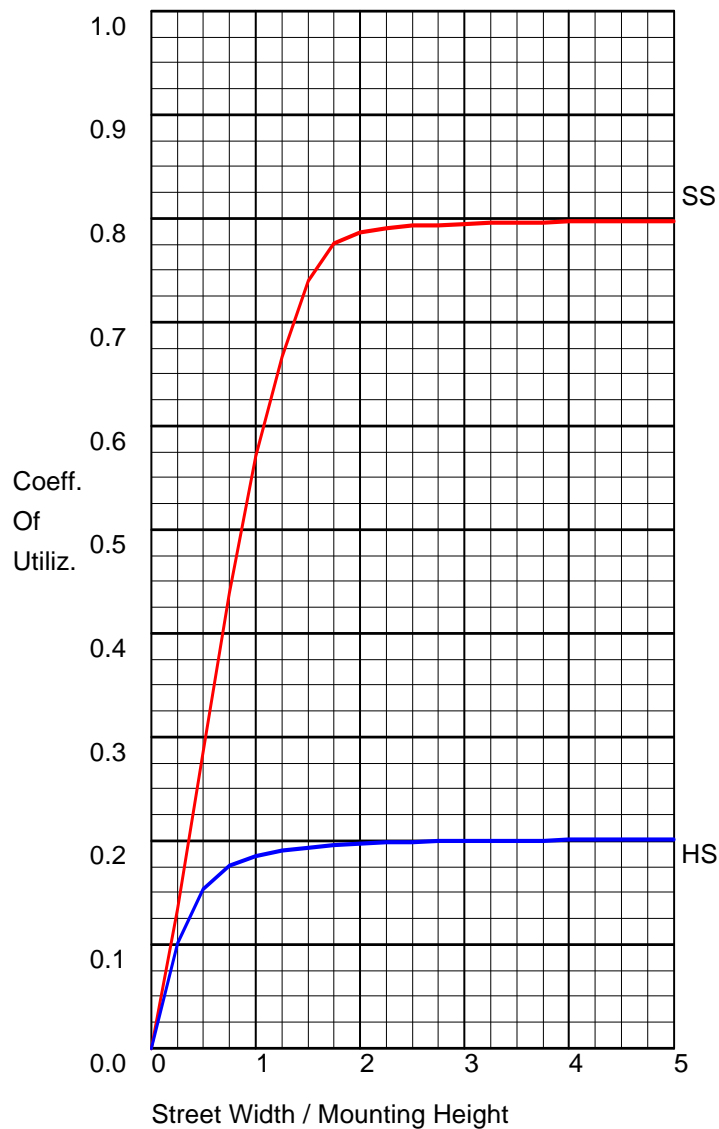
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58.0	90	83	76	71	65	62	62
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59.0	87	81	74	69	64	62	61
59.5	86	80	73	67	63	62	62
60.0	85	79	72	66	63	62	62
60.5	84	78	71	65	62	62	63
61.0	83	78	70	64	62	63	64
61.5	82	76	69	63	62	63	65
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62.5	79	74	66	62	61	64	66
63.0	77	73	65	61	61	64	65
63.5	76	72	65	61	61	64	64
64.0	74	71	64	60	60	63	63
64.5	72	70	63	60	60	62	62
65.0	71	67	62	59	60	61	61
65.5	69	66	61	58	59	60	60
66.0	66	64	60	57	58	59	59
66.5	64	63	59	56	57	58	58
67.0	62	61	58	55	55	57	57
67.5	60	60	57	54	54	56	57
68.0	59	59	55	53	53	55	56
68.5	57	58	54	52	51	52	52
69.0	55	57	53	50	49	49	48
69.5	53	56	52	47	45	45	43
70.0	51	54	50	44	40	40	37
70.5	49	52	48	42	37	36	33
71.0	47	50	47	39	34	32	30
71.5	45	49	46	37	31	30	29
72.0	43	47	44	35	29	29	29
72.5	39	45	43	33	28	28	27
73.0	36	43	42	31	27	27	26
73.5	33	40	39	30	26	26	25
74.0	31	38	36	29	25	25	24
74.5	28	35	33	28	24	23	23
75.0	26	32	31	26	22	22	22
75.5	23	29	29	25	21	21	21
76.0	21	26	27	23	20	19	19
76.5	20	23	24	21	18	18	18
77.0	19	20	22	19	17	17	17
77.5	17	18	20	18	16	15	16
78.0	16	17	18	16	13	13	13
78.5	13	13	15	13	12	12	12
79.0	12	11	12	11	11	11	11
79.5	10	10	10	10	9	9	10
80.0	9	9	9	9	8	8	8
80.5	8	7	8	7	7	6	7
81.0	7	6	6	6	5	5	5
81.5	6	5	5	5	4	4	4
82.0	5	5	4	4	3	3	3
82.5	4	4	3	3	3	2	2
83.0	4	3	3	2	2	2	2
83.5	4	3	3	2	2	2	2
84.0	4	3	2	2	2	1	1
84.5	4	3	2	2	2	1	1

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CANDELA TABULATION - (Cont.)

85.0	3	3	2	2	1	1	1
85.5	3	3	2	2	1	1	1
86.0	3	2	2	1	1	1	1
86.5	2	2	2	1	1	0	0
87.0	2	2	1	1	0	0	0
87.5	2	2	1	1	0	0	0
88.0	1	2	1	1	0	0	0
88.5	1	1	1	1	0	0	0
89.0	1	1	1	1	0	0	0
89.5	1	1	0	0	0	0	0
90.0	0	0	0	0	0	0	0

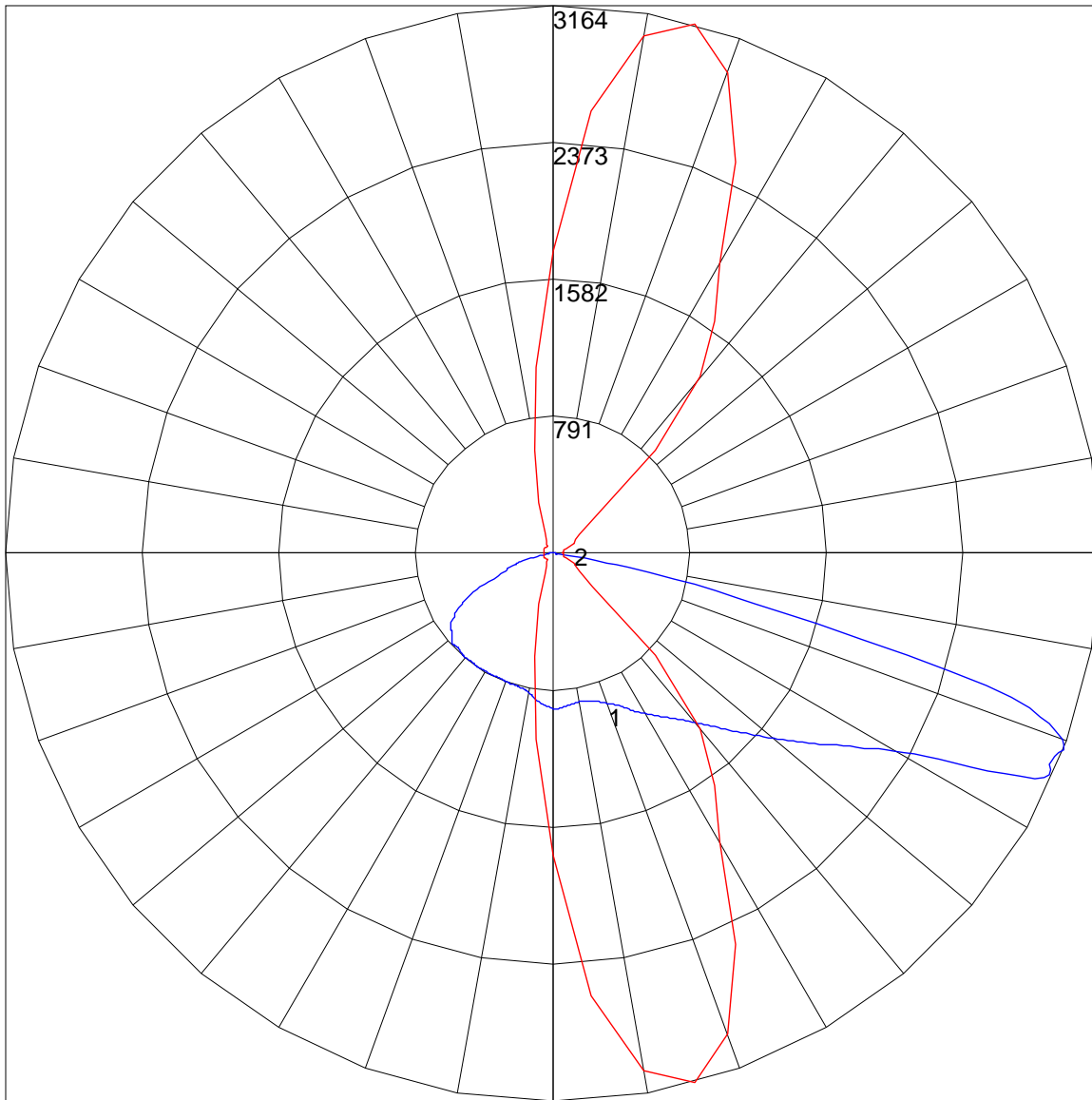
COEFFICIENTS OF UTILIZATION



FLUX DISTRIBUTION

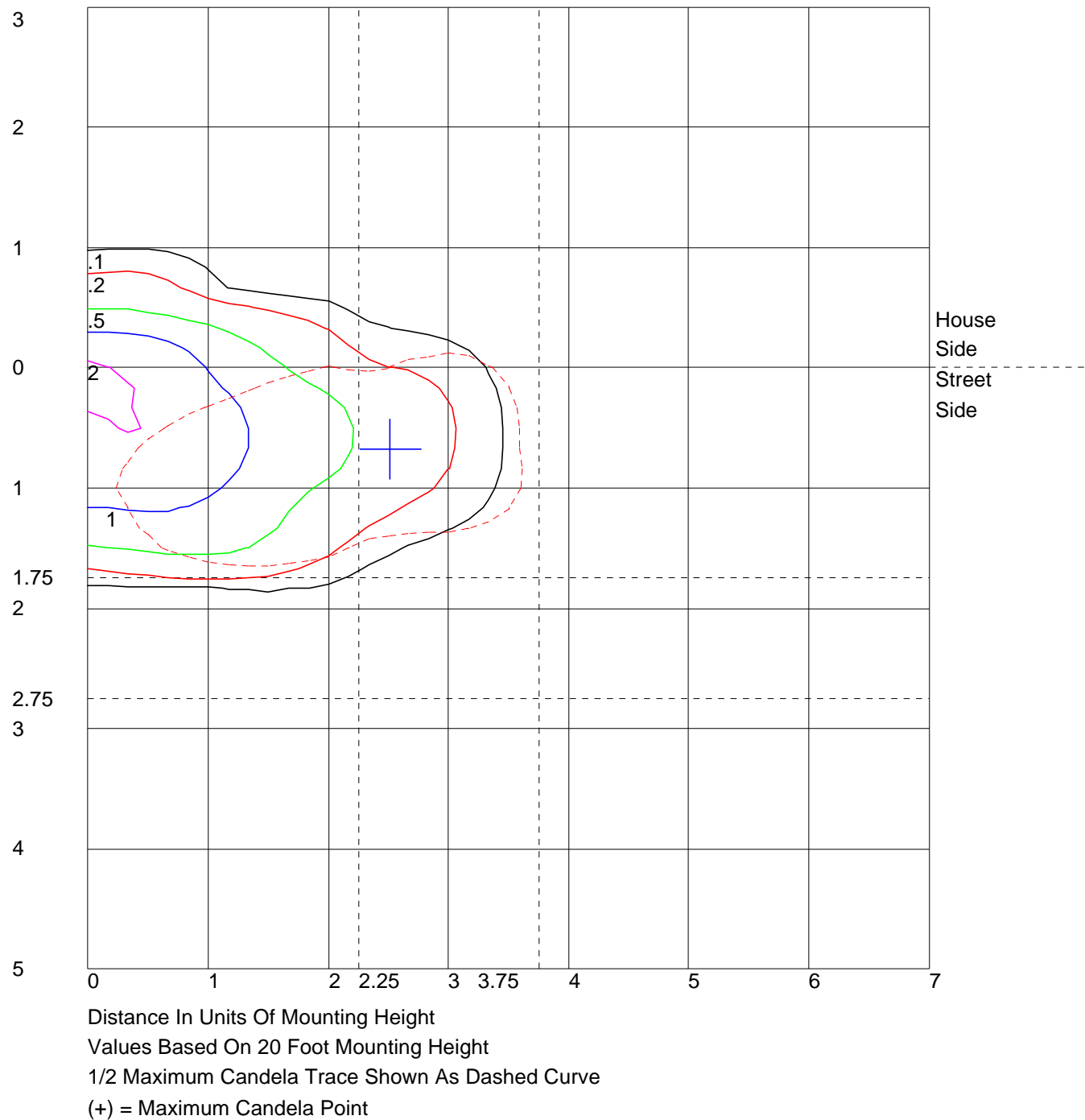
	Lumens	Percent Of Luminaire
Downward Street Side	3361.3	79.9
Downward House Side	846.5	20.1
Downward Total	4207.8	100.0
Upward Street Side	0.0	0.0
Upward House Side	0.0	0.0
Upward Total	0.0	0.0
Total Flux	4207.8	100.0

POLAR GRAPH

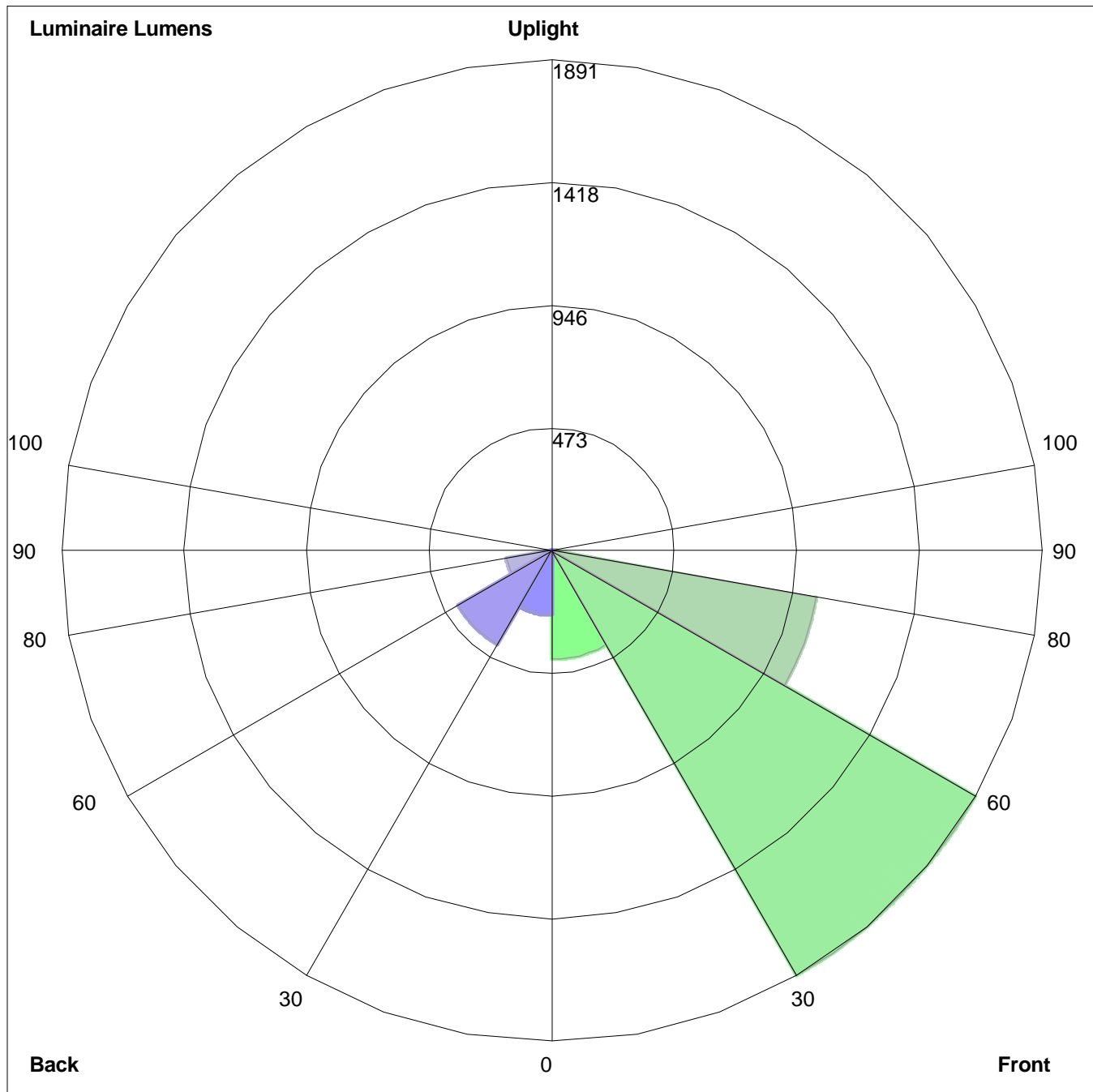


Maximum Candela = 3164 Located At Horizontal Angle = 75, Vertical Angle = 69  
# 1 - Vertical Plane Through Horizontal Angles (75 - 255) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (69) (Through Max. Cd.)

ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINANCE



LUMINAIRE CLASSIFICATION SYSTEM (LCS) GRAPH



Luminaire Lumens:  
Front: Low=418.8, Medium=1891.3, High=1036.9, Very High=14.4  
Back: Low=247.7, Medium=416.5, High=177.4, Very High=4.8  
Uplight: Low=0.0, High=0.0

BUG Rating : B1-U0-G1