



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : FS-4-LS-8CS-DIM-UNV\_48W\_4000K\_.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002  
[TEST] GEN FROM 15180278.01  
[TESTLAB] UL Verification Services Inc.  
[ISSUE DATE] 2024-03-19  
[TEST DATE] 2/23/2024  
[MANUFAC] H.E. WILLIAMS, INC.  
[LUMCAT] FS-4-LS-8CS-DIM-UNV\_48W\_4000K  
[LUMINAIRE] 45 inch Lumen/Wattage selectable, CCT selectable, LED stri  
[MORE] p w/frosted acrylic lens  
[LAMP] LED  
[BALLAST] 0-10V DIMMING DRIVER

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	7138
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	150
Total Luminaire Watts	47.7
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.18
Spacing Criterion (90-270)	1.26
Spacing Criterion (Diagonal)	1.34
Basic Luminous Shape	Rectangular w/Sides
Luminous Length (0-180)	3.71 ft
Luminous Width (90-270)	0.17 ft
Luminous Height	0.04 ft

### LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	30768	29113	30179
55	28005	26953	28715
65	24671	24588	27161
75	20315	22043	25251
85	14048	20293	24034

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**CANDELA TABULATION**

	<u>0.0</u>	<u>22.5</u>	<u>45.0</u>	<u>67.5</u>	<u>90.0</u>	<u>112.5</u>	<u>135.0</u>	<u>157.5</u>	<u>180.0</u>
0.0	2246.368	2246.368	2246.368	2246.368	2246.368	2246.368	2246.368	2246.368	2246.368
0.5	2216.811	2255.061	2249.845	2249.845	2239.413	2251.584	2249.845	2258.539	2218.549
1.0	2215.072	2253.323	2246.368	2251.584	2237.675	2251.584	2246.368	2256.800	2218.549
1.5	2218.549	2253.323	2242.891	2249.845	2239.413	2251.584	2246.368	2255.061	2218.549
2.0	2218.549	2251.584	2246.368	2251.584	2237.675	2255.061	2246.368	2256.800	2216.811
2.5	2216.811	2249.845	2242.891	2249.845	2237.675	2248.107	2246.368	2253.323	2213.333
3.0	2211.595	2249.845	2241.152	2249.845	2237.675	2249.845	2244.629	2255.061	2213.333
3.5	2213.333	2246.368	2239.413	2244.629	2234.197	2246.368	2242.891	2249.845	2215.072
4.0	2208.117	2242.891	2235.936	2246.368	2235.936	2244.629	2241.152	2251.584	2209.856
4.5	2209.856	2237.675	2235.936	2242.891	2232.459	2244.629	2237.675	2248.107	2206.379
5.0	2201.163	2235.936	2230.720	2241.152	2232.459	2242.891	2235.936	2244.629	2206.379
5.5	2199.424	2235.936	2228.981	2239.413	2232.459	2241.152	2235.936	2241.152	2201.163
6.0	2195.947	2230.720	2225.504	2237.675	2227.243	2237.675	2230.720	2241.152	2199.424
6.5	2192.469	2227.243	2223.765	2232.459	2223.765	2235.936	2228.981	2237.675	2195.947
7.0	2187.253	2222.027	2220.288	2227.243	2220.288	2232.459	2227.243	2235.936	2197.685
7.5	2185.514	2220.288	2215.072	2227.243	2216.811	2228.981	2222.027	2232.459	2190.730
8.0	2182.037	2215.072	2211.595	2222.027	2216.811	2227.243	2220.288	2228.981	2187.253
8.5	2176.821	2209.856	2206.379	2216.811	2209.856	2222.027	2216.811	2223.765	2180.298
9.0	2173.344	2204.640	2199.424	2215.072	2206.379	2216.811	2211.595	2222.027	2176.821
9.5	2162.912	2199.424	2199.424	2211.595	2202.901	2215.072	2208.117	2215.072	2171.605
10.0	2161.173	2197.685	2190.730	2201.163	2201.163	2209.856	2204.640	2211.595	2169.866
10.5	2149.002	2187.253	2187.253	2201.163	2192.469	2206.379	2199.424	2204.640	2161.173
11.0	2147.264	2185.514	2182.037	2194.208	2188.992	2201.163	2190.730	2195.947	2161.173
11.5	2140.309	2176.821	2175.082	2188.992	2185.514	2194.208	2187.253	2194.208	2152.480
12.0	2133.354	2169.866	2171.605	2183.776	2178.560	2190.730	2180.298	2187.253	2143.786
12.5	2124.661	2162.912	2164.650	2180.298	2178.560	2182.037	2175.082	2178.560	2140.309
13.0	2121.183	2159.434	2155.957	2173.344	2171.605	2178.560	2169.866	2175.082	2129.877
13.5	2115.967	2150.741	2152.480	2164.650	2164.650	2171.605	2164.650	2169.866	2122.922
14.0	2105.535	2142.048	2143.786	2159.434	2157.696	2166.389	2155.957	2162.912	2115.967
14.5	2093.365	2133.354	2135.093	2152.480	2150.741	2157.696	2150.741	2155.957	2110.751
15.0	2088.149	2128.138	2131.616	2149.002	2143.786	2152.480	2142.048	2147.264	2102.058
15.5	2081.194	2122.922	2121.183	2140.309	2136.832	2143.786	2136.832	2138.570	2095.103
16.0	2075.978	2110.751	2114.229	2135.093	2128.138	2136.832	2126.400	2131.616	2082.933
16.5	2060.330	2103.797	2103.797	2128.138	2121.183	2129.877	2117.706	2122.922	2081.194
17.0	2051.636	2095.103	2098.581	2119.445	2114.229	2119.445	2110.751	2115.967	2069.023
17.5	2042.943	2084.671	2088.149	2109.013	2105.535	2110.751	2100.319	2109.013	2063.807
18.0	2037.727	2072.501	2077.717	2098.581	2098.581	2100.319	2093.365	2095.103	2053.375
18.5	2027.295	2065.546	2069.023	2093.365	2089.887	2093.365	2082.933	2088.149	2044.682
19.0	2013.386	2055.114	2058.591	2082.933	2079.455	2084.671	2075.978	2077.717	2034.250
19.5	2006.431	2046.420	2049.898	2074.239	2069.023	2074.239	2067.285	2069.023	2022.079
20.0	1995.999	2034.250	2039.466	2063.807	2060.330	2067.285	2056.853	2058.591	2013.386
20.5	1983.828	2023.818	2030.772	2055.114	2051.636	2055.114	2048.159	2048.159	2004.692
21.0	1975.135	2013.386	2018.602	2042.943	2041.204	2048.159	2034.250	2041.204	1990.783
21.5	1961.225	2002.954	2008.170	2032.511	2034.250	2039.466	2027.295	2029.034	1982.089
22.0	1952.532	1994.260	1999.476	2022.079	2023.818	2027.295	2016.863	2018.602	1971.657
22.5	1936.884	1978.612	1987.306	2013.386	2016.863	2022.079	2006.431	2006.431	1957.748
23.0	1926.452	1968.180	1976.873	2001.215	2006.431	2009.908	1997.738	1995.999	1950.793
23.5	1917.759	1956.009	1968.180	1992.522	1999.476	2004.692	1987.306	1985.567	1938.623
24.0	1900.372	1945.577	1956.009	1982.089	1989.044	1994.260	1976.873	1969.919	1921.236
24.5	1893.417	1935.145	1943.839	1973.396	1980.351	1985.567	1964.703	1959.487	1910.804
25.0	1879.508	1917.759	1933.407	1964.703	1975.135	1976.873	1954.271	1949.055	1900.372
25.5	1863.860	1907.326	1917.759	1956.009	1966.441	1966.441	1945.577	1938.623	1889.940
26.0	1849.950	1896.894	1907.326	1942.100	1956.009	1956.009	1933.407	1926.452	1874.292
26.5	1837.779	1881.246	1896.894	1935.145	1947.316	1945.577	1921.236	1912.542	1863.860

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## CANDELA TABULATION - (Cont.)

27.0	1827.347	1869.076	1886.462	1922.975	1933.407	1935.145	1909.065	1900.372	1849.950
27.5	1811.699	1858.644	1874.292	1914.281	1924.713	1922.975	1898.633	1888.201	1836.041
28.0	1799.529	1841.257	1858.644	1903.849	1916.020	1912.542	1884.724	1874.292	1823.870
28.5	1787.358	1829.086	1848.212	1891.678	1905.588	1902.110	1874.292	1862.121	1811.699
29.0	1773.448	1815.177	1836.041	1881.246	1895.156	1889.940	1862.121	1849.950	1796.051
29.5	1759.539	1803.006	1823.870	1869.076	1882.985	1879.508	1851.689	1834.302	1782.142
30.0	1742.152	1789.097	1811.699	1856.905	1872.553	1869.076	1837.779	1822.131	1766.494
30.5	1728.417	1775.187	1797.790	1846.473	1862.121	1856.905	1825.609	1808.222	1752.584
31.0	1713.812	1759.539	1785.619	1834.302	1851.689	1846.473	1811.699	1794.313	1742.152
31.5	1702.858	1743.891	1773.448	1822.131	1839.518	1836.041	1801.267	1780.403	1723.375
32.0	1684.602	1733.111	1759.539	1811.699	1829.086	1825.609	1789.097	1766.494	1710.508
32.5	1672.779	1717.463	1745.630	1799.529	1818.654	1813.438	1773.448	1750.846	1698.512
33.0	1655.740	1703.554	1730.329	1789.097	1809.961	1803.006	1759.539	1735.545	1679.038
33.5	1640.440	1688.775	1717.289	1778.665	1797.790	1789.097	1747.368	1722.158	1666.694
34.0	1626.530	1674.170	1707.205	1764.755	1787.358	1778.665	1736.241	1709.118	1654.002
34.5	1610.361	1657.827	1692.426	1752.584	1776.926	1766.494	1722.505	1691.557	1636.267
35.0	1597.668	1643.743	1680.082	1742.152	1764.755	1754.323	1709.465	1677.995	1624.618
35.5	1581.847	1627.574	1667.737	1730.851	1756.062	1742.152	1694.687	1661.652	1605.840
36.0	1563.243	1610.882	1652.784	1718.506	1743.891	1732.764	1680.777	1647.221	1593.322
36.5	1547.073	1596.451	1641.309	1705.640	1733.633	1720.071	1667.911	1632.094	1578.891
37.0	1534.555	1579.934	1625.661	1695.904	1723.027	1708.596	1653.480	1616.968	1566.894
37.5	1517.863	1566.372	1612.969	1683.211	1711.726	1694.860	1641.831	1603.058	1551.767
38.0	1499.955	1550.550	1598.538	1671.910	1700.598	1682.690	1627.921	1588.801	1533.859
38.5	1485.524	1534.728	1586.889	1659.218	1688.080	1670.693	1612.621	1574.718	1516.820
39.0	1468.137	1517.863	1572.284	1646.873	1676.257	1658.174	1600.450	1561.156	1500.303
39.5	1451.620	1500.824	1559.070	1634.007	1665.477	1646.004	1585.672	1545.856	1481.003
40.0	1433.885	1487.089	1545.334	1622.184	1655.392	1635.050	1571.936	1531.773	1462.921
40.5	1418.933	1471.441	1531.773	1609.665	1642.005	1622.532	1558.374	1513.864	1445.882
41.0	1399.981	1453.880	1517.342	1598.190	1628.617	1610.361	1544.465	1498.042	1428.843
41.5	1384.333	1436.667	1505.519	1586.367	1619.576	1596.625	1529.512	1479.091	1411.630
42.0	1366.251	1421.367	1490.392	1573.327	1607.579	1586.889	1515.777	1461.182	1396.156
42.5	1350.081	1405.023	1475.961	1561.852	1596.104	1572.979	1500.303	1445.187	1379.117
43.0	1332.694	1390.592	1462.052	1548.812	1584.281	1559.591	1487.263	1426.061	1362.078
43.5	1317.568	1375.640	1447.447	1535.772	1573.675	1546.725	1474.396	1409.196	1347.125
44.0	1302.789	1357.905	1433.885	1524.296	1561.678	1535.598	1458.574	1391.114	1329.217
44.5	1282.099	1341.214	1417.194	1510.909	1549.681	1523.775	1446.751	1375.118	1313.395
45.0	1266.972	1324.696	1405.719	1498.738	1537.858	1508.822	1433.016	1357.036	1297.052
45.5	1251.324	1308.527	1389.549	1485.872	1523.601	1497.695	1418.585	1342.431	1280.708
46.0	1234.112	1294.791	1376.161	1471.788	1511.778	1485.698	1405.023	1325.218	1262.278
46.5	1218.985	1278.448	1361.209	1457.357	1500.477	1471.093	1391.114	1309.744	1247.152
47.0	1201.251	1260.887	1347.125	1447.099	1487.958	1461.009	1378.248	1293.748	1231.504
47.5	1183.864	1245.239	1332.694	1432.668	1476.831	1448.664	1364.164	1277.231	1211.509
48.0	1170.302	1229.069	1319.480	1422.410	1462.573	1432.842	1350.429	1260.539	1197.947
48.5	1151.351	1212.900	1305.223	1406.588	1451.272	1421.193	1336.172	1244.544	1177.952
49.0	1140.223	1199.338	1292.009	1394.591	1438.754	1408.501	1321.393	1229.069	1162.304
49.5	1125.270	1181.256	1277.926	1381.899	1425.192	1396.330	1303.311	1211.856	1146.830
50.0	1107.710	1167.346	1263.843	1368.859	1414.064	1383.290	1290.271	1195.339	1133.442
50.5	1090.323	1155.002	1246.630	1355.645	1401.546	1369.728	1275.318	1179.865	1118.663
51.0	1073.980	1139.875	1234.807	1342.257	1389.897	1356.688	1258.801	1162.826	1099.538
51.5	1057.810	1124.749	1219.333	1330.782	1379.117	1343.822	1244.370	1152.915	1083.021
52.0	1040.771	1107.884	1206.467	1318.090	1365.555	1331.130	1228.722	1137.093	1065.460
52.5	1025.123	1092.583	1192.036	1304.702	1352.863	1317.742	1214.986	1123.010	1049.464
53.0	1007.562	1075.718	1176.909	1292.009	1339.823	1306.440	1200.903	1105.971	1033.816
53.5	991.740	1060.070	1162.826	1278.448	1326.783	1292.531	1185.255	1089.628	1015.560
54.0	974.527	1045.465	1150.134	1265.234	1312.873	1279.491	1172.562	1073.632	997.826
54.5	957.836	1028.426	1139.875	1250.629	1302.094	1267.146	1157.262	1056.941	982.004

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55.0	939.928	1012.430	1126.488	1238.110	1289.054	1253.063	1148.569	1041.814	964.443
55.5	923.584	998.173	1111.709	1223.853	1274.970	1239.675	1135.007	1025.818	947.056
56.0	907.241	980.787	1097.104	1209.944	1263.147	1227.157	1120.054	1009.301	931.582
56.5	891.593	964.617	1082.499	1197.425	1248.543	1211.161	1104.406	991.566	913.848
57.0	874.554	948.273	1068.416	1183.168	1236.024	1197.947	1089.801	976.092	895.244
57.5	858.558	933.495	1055.202	1169.954	1221.071	1183.516	1074.849	958.705	878.900
58.0	842.910	917.151	1039.380	1156.393	1206.814	1169.607	1059.549	943.231	862.383
58.5	826.044	900.981	1024.775	1147.004	1193.600	1158.131	1045.118	927.062	844.822
59.0	810.570	885.333	1011.735	1136.920	1180.734	1147.004	1029.296	909.849	829.348
59.5	793.879	870.033	996.435	1120.576	1166.129	1133.964	1015.212	894.722	811.613
60.0	777.883	854.559	980.613	1107.014	1157.610	1119.533	1000.086	878.900	796.661
60.5	761.714	838.737	965.834	1094.670	1145.091	1105.623	986.698	861.861	778.231
61.0	744.153	823.089	952.098	1079.022	1132.225	1090.671	971.224	847.256	761.887
61.5	728.331	807.267	938.189	1064.591	1118.663	1076.414	957.141	829.870	745.370
62.0	712.161	791.793	923.932	1051.029	1103.537	1063.547	940.971	814.569	728.505
62.5	696.165	776.666	909.675	1036.946	1088.758	1047.899	927.409	798.226	712.161
63.0	680.691	760.844	895.244	1022.863	1074.849	1034.164	912.457	782.925	696.165
63.5	664.348	746.065	880.639	1007.736	1061.113	1019.733	897.156	766.930	680.170
64.0	647.483	730.591	866.729	993.653	1046.856	1005.823	883.073	751.108	662.783
64.5	630.096	715.117	851.255	978.874	1031.556	992.436	867.773	735.807	646.613
65.0	614.969	700.860	836.824	964.791	1017.473	977.135	853.863	720.159	630.270
65.5	599.843	685.386	822.567	951.751	1004.433	963.052	839.954	704.511	614.448
66.0	583.325	670.085	809.005	935.407	989.828	948.099	824.306	688.689	598.104
66.5	568.894	655.307	794.053	922.019	974.527	933.495	810.570	673.215	582.108
67.0	553.073	640.876	779.622	907.414	960.444	918.020	794.922	658.262	566.982
67.5	538.120	625.923	765.886	892.114	945.144	904.285	781.708	643.484	551.508
68.0	522.646	611.492	750.412	879.422	931.234	890.028	766.582	628.183	536.555
68.5	507.519	597.235	737.198	863.600	916.803	874.554	751.803	613.231	519.864
69.0	492.393	581.761	722.941	850.734	902.198	860.992	737.546	599.147	505.085
69.5	476.397	567.330	708.858	835.433	887.420	846.735	723.810	584.021	488.568
70.0	461.966	553.073	694.079	821.350	872.641	831.261	708.858	568.547	473.789
70.5	447.535	537.772	680.344	806.397	858.384	817.699	694.601	553.594	458.836
71.0	431.713	524.211	666.434	793.184	843.953	803.094	680.691	538.815	443.362
71.5	417.456	509.606	653.394	778.926	829.522	789.706	665.913	524.211	428.062
72.0	402.677	496.392	638.441	763.800	814.917	774.754	652.699	510.301	412.066
72.5	388.072	482.135	625.054	750.064	801.355	761.192	638.268	495.349	397.113
73.0	373.294	468.747	610.797	735.112	786.403	745.892	624.532	480.918	383.552
73.5	359.384	455.185	597.409	720.333	771.450	731.808	610.797	466.834	368.425
74.0	345.127	441.102	584.021	707.815	757.715	717.551	596.539	452.751	354.168
74.5	330.001	426.845	569.416	693.036	742.762	703.816	583.673	438.146	339.042
75.0	315.570	413.805	556.376	679.822	729.548	689.211	570.285	424.758	325.306
75.5	302.529	400.591	543.684	665.217	715.117	675.301	556.202	410.501	311.049
76.0	288.098	387.377	530.296	652.177	701.034	661.914	543.510	397.461	296.966
76.5	275.058	374.511	517.256	638.268	686.777	647.483	529.774	383.378	284.099
77.0	262.192	361.644	504.216	624.184	672.519	634.095	516.039	370.338	270.364
77.5	248.978	348.952	491.523	611.144	659.479	620.012	502.999	356.602	257.150
78.0	235.417	336.260	479.005	597.583	644.875	606.798	490.480	344.258	243.936
78.5	222.550	324.263	466.139	584.369	631.661	593.584	477.788	331.565	230.896
79.0	209.858	311.918	454.142	570.981	617.751	580.022	464.748	319.395	218.551
79.5	198.209	299.748	442.319	558.289	605.059	568.199	452.751	306.876	205.338
80.0	186.386	287.577	430.148	544.901	592.367	554.463	440.233	294.705	193.515
80.5	174.215	275.928	418.151	532.730	578.457	542.119	428.583	283.752	181.344
81.0	162.392	264.800	406.502	519.864	565.939	528.905	416.760	271.755	170.042
81.5	151.091	253.499	394.679	507.693	553.073	516.560	405.111	260.801	158.567
82.0	139.963	242.719	383.378	495.522	539.337	504.390	393.462	250.021	147.440
82.5	129.705	231.592	372.076	484.395	526.819	491.523	381.639	239.416	136.834

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**CANDELA TABULATION - (Cont.)**

83.0	118.752	221.159	360.949	472.224	514.996	479.353	371.033	228.810	126.228
83.5	108.493	211.075	349.995	460.401	502.477	468.051	359.558	218.551	115.970
84.0	98.409	201.165	339.389	448.752	490.654	456.576	349.300	208.467	105.885
84.5	88.672	191.428	328.783	437.798	478.831	444.927	338.520	198.731	96.496
85.0	79.631	182.387	318.178	426.323	467.356	433.278	327.914	189.342	86.760
85.5	70.590	172.824	308.441	415.022	455.707	422.498	317.830	179.257	77.719
86.0	61.549	163.957	298.704	404.764	444.405	411.718	307.398	170.216	68.504
86.5	53.030	155.264	289.316	394.158	433.626	400.591	297.835	161.001	59.637
87.0	44.510	146.744	279.579	383.899	422.672	390.506	288.446	152.308	50.769
87.5	36.686	138.746	270.538	374.511	412.240	380.596	278.710	143.788	42.250
88.0	29.036	130.053	262.018	364.948	402.677	370.859	269.842	135.095	33.730
88.5	21.386	122.577	254.194	356.255	392.941	361.992	261.497	126.576	25.037
89.0	13.736	115.448	246.892	347.735	384.421	352.951	253.325	119.099	16.865
89.5	6.781	109.537	239.937	339.911	375.902	345.127	246.370	112.492	8.867
90.0	2.434	104.147	233.852	332.261	367.730	337.129	239.937	106.755	2.782
90.5	1.565	99.626	227.940	324.958	359.558	329.305	233.504	101.886	1.565
91.0	1.565	95.801	222.029	317.830	351.908	322.350	226.897	98.061	1.391
91.5	1.565	93.019	216.987	310.875	344.605	315.570	221.855	95.106	1.391
92.0	1.565	90.585	211.771	304.790	337.998	309.484	216.987	92.671	1.391
92.5	1.565	88.325	208.119	299.226	331.565	303.573	212.814	90.411	1.391
93.0	1.565	86.238	204.294	293.836	325.480	298.183	208.989	88.151	1.391
93.5	1.565	84.152	200.817	289.142	320.264	293.141	205.338	86.064	1.391
94.0	1.565	82.239	197.513	284.273	315.048	288.446	202.208	83.978	1.391
94.5	1.565	80.327	194.558	280.101	310.353	284.099	198.904	81.892	1.391
95.0	1.565	78.414	191.602	275.928	305.833	279.405	195.601	79.979	1.391
95.5	1.565	76.676	188.299	271.755	300.791	275.406	192.471	78.240	1.391
96.0	1.565	74.937	185.517	267.582	296.444	271.059	189.342	76.502	1.391
96.5	1.565	73.198	182.387	263.757	292.097	267.234	186.038	74.589	1.391
97.0	1.565	71.460	179.605	259.410	287.577	262.714	183.256	72.850	1.391
97.5	1.565	69.721	176.476	255.933	283.230	259.063	180.301	71.286	1.391
98.0	1.565	68.156	173.694	251.760	279.231	255.064	177.171	69.547	1.391
98.5	1.565	66.765	171.086	248.109	275.232	251.065	174.389	67.808	1.391
99.0	1.565	65.026	167.956	244.632	271.233	247.240	171.433	66.244	1.391
99.5	1.565	63.462	165.348	240.980	267.060	243.588	168.651	64.679	1.391
100.0	1.565	62.071	162.392	237.329	263.062	239.937	165.696	63.114	1.391
100.5	1.565	60.506	159.784	233.678	258.889	236.460	163.088	61.723	1.565
101.0	1.565	59.289	157.176	230.027	255.237	232.982	160.480	60.158	1.565
101.5	1.565	57.724	154.394	226.549	251.586	229.157	157.524	58.767	1.565
102.0	1.739	56.507	151.960	223.072	247.413	226.028	155.090	57.376	1.565
102.5	1.739	55.116	149.352	219.769	243.414	222.724	152.308	55.985	1.565
103.0	1.739	53.899	146.744	216.291	239.763	219.247	149.700	54.594	1.565
103.5	1.739	52.508	144.136	213.335	236.286	215.770	147.266	53.203	1.565
104.0	1.739	51.291	141.876	210.206	232.809	212.466	144.484	51.813	1.565
104.5	1.739	50.074	139.268	206.555	229.505	209.163	142.050	50.595	1.739
105.0	1.739	48.857	137.008	203.599	225.680	206.033	139.616	49.378	1.739
105.5	1.739	47.640	134.747	200.469	222.377	202.556	137.181	48.161	1.739
106.0	1.739	46.423	132.313	197.166	219.073	199.426	134.573	46.944	1.739
106.5	1.739	45.379	130.053	194.384	215.248	196.296	132.313	45.901	1.739
107.0	1.913	44.162	127.793	191.254	212.292	192.993	129.879	44.684	1.739
107.5	1.913	43.119	125.358	187.951	209.163	190.037	127.793	43.641	1.739
108.0	1.913	42.076	123.098	185.343	205.859	187.081	125.532	42.598	1.739
108.5	1.913	40.859	121.186	182.213	202.730	184.300	123.098	41.380	1.913
109.0	1.913	39.816	118.925	179.257	199.600	181.344	120.838	40.337	1.913
109.5	1.913	38.772	116.665	176.302	196.644	178.388	118.752	39.294	1.913
110.0	1.913	37.903	114.753	173.520	193.515	175.432	116.665	38.251	1.913
110.5	1.913	36.860	112.666	170.912	190.385	172.477	114.405	37.208	1.913

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**CANDELA TABULATION - (Cont.)**

111.0	1.913	35.817	110.580	168.130	187.603	170.042	112.318	36.338	1.913
111.5	2.086	34.947	108.667	165.522	184.647	167.087	110.058	35.295	1.913
112.0	2.086	33.904	106.581	162.566	181.865	164.305	108.146	34.252	1.913
112.5	2.086	33.035	104.494	160.306	178.910	161.697	106.059	33.383	2.086
113.0	2.086	32.165	102.756	157.350	175.954	159.089	103.973	32.339	2.086
113.5	2.086	31.296	100.495	154.742	172.998	156.133	102.060	31.470	2.086
114.0	2.086	30.253	98.757	152.308	170.564	153.525	100.148	30.601	2.086
114.5	2.086	29.384	96.844	149.700	167.608	151.091	98.061	29.557	2.086
115.0	2.086	28.688	94.932	147.266	165.000	148.483	95.975	28.688	2.086
115.5	2.086	27.645	93.019	144.832	162.218	145.875	94.062	27.819	2.086
116.0	2.086	26.949	91.280	142.050	159.610	143.441	92.150	26.949	2.260
116.5	2.086	26.080	89.368	139.789	157.002	141.007	90.411	26.254	2.260
117.0	2.086	25.211	87.455	137.181	154.220	138.399	88.499	25.385	2.260
117.5	2.086	24.341	85.717	134.921	151.786	135.964	86.586	24.515	2.260
118.0	2.086	23.646	84.152	132.313	149.178	133.530	84.847	23.646	2.260
118.5	2.086	22.777	82.413	130.053	146.744	131.096	83.109	22.951	2.260
119.0	2.086	22.081	80.675	127.793	144.136	128.836	81.370	22.081	2.260
119.5	2.086	21.212	78.936	125.532	141.528	126.576	79.631	21.386	2.260
120.0	2.086	20.516	77.197	122.924	139.094	123.968	77.719	20.516	2.260
120.5	2.086	19.821	75.458	121.012	136.486	121.707	76.154	19.821	2.434
121.0	2.086	18.952	73.894	118.578	133.878	119.447	74.415	19.125	2.434
121.5	2.086	18.082	72.329	116.317	131.792	117.187	72.850	18.256	2.434
122.0	2.086	17.387	70.764	114.057	129.010	114.926	71.286	17.561	2.434
122.5	2.086	16.691	69.025	111.797	126.749	112.492	69.721	16.865	2.434
123.0	2.086	15.996	67.461	109.710	124.315	110.406	67.982	16.170	2.434
123.5	2.086	15.300	65.896	107.450	121.881	108.319	66.417	15.474	2.434
124.0	2.086	14.605	64.505	105.190	119.621	106.059	64.853	14.779	2.434
124.5	2.086	13.909	62.940	103.103	117.361	103.625	63.288	14.083	2.608
125.0	2.086	13.214	61.375	101.017	115.100	101.539	61.723	13.388	2.608
125.5	2.086	12.518	59.810	98.931	112.666	99.452	60.158	12.692	2.608
126.0	2.086	11.997	58.246	97.018	110.406	97.366	58.593	11.997	2.608
126.5	2.086	11.301	56.855	94.932	108.146	95.279	57.202	11.301	2.608
127.0	2.086	10.606	55.464	92.845	105.711	93.193	55.811	10.780	2.608
127.5	2.086	10.084	54.073	90.933	103.625	91.107	54.247	10.084	2.608
128.0	2.086	9.389	52.508	88.846	101.539	89.368	52.856	9.563	2.782
128.5	2.086	8.867	50.943	86.934	99.452	87.455	51.465	9.041	2.782
129.0	2.086	8.346	49.552	84.847	97.192	85.369	50.074	8.520	2.782
129.5	2.086	7.998	48.335	82.935	95.106	83.456	48.683	8.172	2.782
130.0	2.260	7.476	47.118	81.022	93.019	81.544	47.466	7.650	2.782
130.5	2.260	7.129	45.553	79.284	90.933	79.805	46.075	7.302	2.956
131.0	2.260	6.781	44.336	77.545	88.846	77.719	44.684	6.955	2.956
131.5	2.260	6.433	43.119	75.632	86.760	75.980	43.467	6.607	2.956
132.0	2.260	6.085	41.728	73.894	84.673	74.068	42.076	6.259	2.956
132.5	2.260	5.738	40.511	71.981	82.761	72.329	40.859	5.911	2.956
133.0	2.260	5.564	39.294	70.069	80.848	70.416	39.642	5.738	3.130
133.5	2.260	5.390	37.903	68.330	78.762	68.678	38.251	5.564	3.130
134.0	2.260	5.216	36.512	66.591	77.023	66.765	37.034	5.390	3.130
134.5	2.260	5.042	35.121	64.853	74.937	65.026	35.817	5.216	3.130
135.0	2.260	4.868	33.730	63.114	73.024	63.288	34.600	5.042	3.130
135.5	2.260	4.694	32.513	61.201	71.112	61.549	33.383	4.868	3.130
136.0	2.260	4.521	31.122	59.463	69.199	59.810	32.165	4.694	3.130
136.5	2.260	4.521	29.905	57.898	67.287	58.072	31.122	4.694	3.303
137.0	2.260	4.347	28.514	56.333	65.374	56.333	29.905	4.521	3.303
137.5	2.260	4.347	27.297	54.594	63.636	54.768	28.688	4.521	3.303
138.0	2.260	4.173	26.080	52.856	61.897	53.030	27.645	4.347	3.303
138.5	2.260	4.173	25.037	51.291	60.158	51.465	26.602	4.347	3.303

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**CANDELA TABULATION - (Cont.)**

139.0	2.434	4.173	23.820	49.726	58.419	49.726	25.559	4.173	3.477
139.5	2.434	3.999	22.603	48.161	56.681	48.335	24.515	4.173	3.477
140.0	2.434	3.999	21.560	46.596	54.942	46.596	23.298	4.173	3.477
140.5	2.434	3.999	20.516	44.858	53.203	45.032	22.255	3.999	3.477
141.0	2.434	3.825	19.647	43.467	51.465	43.467	21.212	3.999	3.477
141.5	2.434	3.825	18.604	41.902	49.726	42.076	20.169	3.999	3.651
142.0	2.434	3.825	17.734	40.511	48.161	40.511	19.125	3.999	3.651
142.5	2.434	3.651	16.865	38.946	46.423	38.946	18.082	3.825	3.651
143.0	2.434	3.651	15.996	37.555	44.858	37.382	17.213	3.825	3.651
143.5	2.608	3.651	15.126	35.991	43.293	35.991	16.170	3.825	3.651
144.0	2.608	3.651	14.257	34.600	41.554	34.600	15.300	3.651	3.651
144.5	2.608	3.651	13.388	33.209	39.990	33.035	14.257	3.651	3.825
145.0	2.608	3.477	12.692	31.644	38.425	31.644	13.388	3.651	3.825
145.5	2.608	3.477	11.823	30.253	36.860	30.253	12.518	3.651	3.825
146.0	2.608	3.477	11.128	29.036	35.295	28.862	11.649	3.651	3.825
146.5	2.608	3.477	10.432	27.645	33.730	27.471	10.954	3.651	3.825
147.0	2.608	3.477	9.737	26.254	32.339	26.080	10.258	3.477	3.825
147.5	2.608	3.477	9.041	24.863	30.775	24.863	9.563	3.477	3.999
148.0	2.782	3.477	8.520	23.472	29.384	23.472	9.041	3.477	3.999
148.5	2.782	3.477	7.998	22.081	27.819	22.255	8.520	3.477	3.999
149.0	2.782	3.477	7.650	20.516	26.428	20.864	7.998	3.477	3.999
149.5	2.782	3.477	7.129	19.299	25.037	19.647	7.650	3.477	3.999
150.0	2.782	3.477	6.781	17.908	23.646	18.430	7.302	3.651	3.999
150.5	2.782	3.477	6.607	16.691	22.255	17.213	6.955	3.477	4.173
151.0	2.782	3.477	6.259	15.474	20.864	15.996	6.607	3.477	4.173
151.5	2.956	3.477	6.085	14.431	19.647	14.953	6.433	3.651	4.173
152.0	2.956	3.651	5.911	13.214	18.256	13.736	6.085	3.651	4.173
152.5	2.956	3.651	5.738	12.345	17.039	12.692	5.911	3.651	4.173
153.0	2.956	3.651	5.564	11.475	15.648	11.649	5.738	3.651	4.173
153.5	2.956	3.651	5.390	10.606	14.431	10.780	5.564	3.651	4.173
154.0	2.956	3.651	5.216	9.737	13.214	10.084	5.390	3.651	4.347
154.5	3.130	3.651	5.042	9.041	12.171	9.215	5.216	3.651	4.347
155.0	3.130	3.651	4.868	8.346	11.128	8.520	5.042	3.651	4.347
155.5	3.130	3.825	4.868	7.824	10.258	7.998	5.042	3.651	4.347
156.0	3.130	3.825	4.694	7.302	9.389	7.476	4.868	3.825	4.347
156.5	3.303	3.825	4.694	6.781	8.693	6.955	4.694	3.825	4.347
157.0	3.303	3.825	4.521	6.433	7.998	6.607	4.694	3.825	4.347
157.5	3.303	3.825	4.521	6.259	7.302	6.259	4.521	3.825	4.347
158.0	3.303	3.825	4.347	5.911	6.955	5.911	4.521	3.825	4.521
158.5	3.303	3.999	4.347	5.738	6.433	5.738	4.347	3.825	4.521
159.0	3.477	3.999	4.173	5.390	6.085	5.390	4.347	3.999	4.521
159.5	3.477	3.999	4.173	5.216	5.738	5.216	4.173	3.999	4.521
160.0	3.477	3.999	4.173	5.042	5.564	5.042	4.173	3.999	4.521
160.5	3.477	3.999	3.999	4.868	5.216	4.868	4.173	3.999	4.521
161.0	3.477	3.999	3.999	4.694	5.042	4.694	3.999	3.999	4.521
161.5	3.651	3.999	3.999	4.694	4.868	4.694	3.999	3.999	4.521
162.0	3.651	4.173	3.999	4.521	4.694	4.521	3.999	3.999	4.521
162.5	3.651	4.173	3.999	4.347	4.521	4.347	3.999	4.173	4.521
163.0	3.651	4.173	3.999	4.173	4.347	4.347	3.999	4.173	4.694
163.5	3.651	4.173	3.999	4.173	4.173	4.173	3.999	4.173	4.694
164.0	3.825	4.173	3.999	3.999	4.173	3.999	3.999	4.173	4.694
164.5	3.825	4.173	3.999	3.999	3.999	3.999	3.999	4.173	4.694
165.0	3.825	4.347	3.999	3.999	3.999	3.999	3.999	4.173	4.694
165.5	3.825	4.347	3.999	3.999	3.825	3.999	3.999	4.347	4.694
166.0	3.999	4.347	4.173	3.999	3.825	3.825	4.173	4.347	4.694
166.5	3.999	4.347	4.173	3.999	3.825	3.825	4.173	4.347	4.694

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**CANDELA TABULATION - (Cont.)**

167.0	3.999	4.347	4.173	3.825	3.651	3.825	4.173	4.347	4.694
167.5	3.999	4.347	4.173	3.825	3.651	3.825	4.173	4.347	4.694
168.0	3.999	4.347	4.173	3.825	3.651	3.825	4.173	4.347	4.694
168.5	4.173	4.521	4.173	3.825	3.651	3.825	4.173	4.347	4.694
169.0	4.173	4.521	4.173	3.999	3.651	3.999	4.173	4.521	4.694
169.5	4.173	4.521	4.173	3.999	3.651	3.999	4.173	4.521	4.694
170.0	4.173	4.521	4.173	3.999	3.651	3.825	4.173	4.521	4.694
170.5	4.173	4.521	4.173	3.999	3.651	3.999	4.173	4.521	4.694
171.0	4.173	4.521	4.347	3.999	3.651	3.999	4.173	4.521	4.694
171.5	4.173	4.521	4.347	3.999	3.651	3.999	4.347	4.521	4.694
172.0	4.173	4.521	4.347	3.999	3.651	3.999	4.347	4.521	4.694
172.5	4.347	4.521	4.347	3.999	3.825	3.999	4.347	4.521	4.694
173.0	4.347	4.521	4.347	3.999	3.825	3.999	4.347	4.521	4.694
173.5	4.347	4.521	4.347	3.999	3.825	3.999	4.347	4.521	4.694
174.0	4.347	4.521	4.347	3.999	3.825	3.999	4.347	4.521	4.694
174.5	4.347	4.521	4.347	3.999	3.825	3.999	4.347	4.521	4.694
175.0	4.347	4.521	4.347	3.999	3.825	3.999	4.347	4.521	4.694
175.5	4.521	4.521	4.347	3.999	3.825	3.999	4.347	4.521	4.694
176.0	4.521	4.521	4.347	3.999	3.825	3.999	4.347	4.521	4.694
176.5	4.521	4.521	4.347	4.173	3.825	3.999	4.347	4.521	4.694
177.0	4.521	4.694	4.347	4.173	3.825	3.999	4.347	4.694	4.694
177.5	4.521	4.694	4.347	4.173	3.825	3.999	4.347	4.694	4.694
178.0	4.521	4.694	4.347	4.173	3.825	4.173	4.347	4.694	4.694
178.5	4.521	4.694	4.347	4.173	3.825	4.173	4.347	4.694	4.694
179.0	4.694	4.694	4.347	4.173	3.825	4.173	4.521	4.694	4.694
179.5	4.694	4.694	4.347	4.173	3.825	4.173	4.347	4.694	4.694
180.0	4.347	4.347	4.347	4.347	4.347	4.347	4.347	4.347	4.347



**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : FS-4-LS-8CS-DIM-UNV\_48W\_4000K\_.IES**

**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	813.93	N.A.	11.40
0-30	1709.75	N.A.	24.00
0-40	2772.1	N.A.	38.80
0-60	4879.82	N.A.	68.40
0-80	6289.29	N.A.	88.10
0-90	6624.41	N.A.	92.80
10-90	6412.32	N.A.	89.80
20-40	1958.16	N.A.	27.40
20-50	3053.55	N.A.	42.80
40-70	2936.74	N.A.	41.10
60-80	1409.47	N.A.	19.70
70-80	580.46	N.A.	8.10
80-90	335.12	N.A.	4.70
90-110	328.54	N.A.	4.60
90-120	417.29	N.A.	5.80
90-130	470.44	N.A.	6.60
90-150	509.20	N.A.	7.10
90-180	513.96	N.A.	7.20
110-180	185.41	N.A.	2.60
0-180	7138.37	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	212.09
10-20	601.84
20-30	895.82
30-40	1062.35
40-50	1095.39
50-60	1012.34
60-70	829.02
70-80	580.46
80-90	335.12
90-100	194.05
100-110	134.49
110-120	88.75
120-130	53.15
130-140	27.55
140-150	11.21
150-160	3.16
160-170	1.19
170-180	0.41

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : FS-4-LS-8CS-DIM-UNV\_48W\_4000K\_.IES**

**COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD**

Effective Floor Cavity Reflectance 0.20

RC	80				70				50			30			10			0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	117	117	117	117	114	114	114	114	107	107	107	101	101	101	95	95	95	93
1	106	100	96	91	102	97	93	89	92	88	85	87	84	81	82	79	77	75
2	96	87	80	73	92	84	78	72	80	74	69	75	71	66	71	67	64	61
3	87	76	67	61	84	74	66	60	70	63	58	66	60	56	63	58	54	51
4	80	67	58	51	77	65	57	50	62	55	49	59	52	47	56	50	46	44
5	73	60	51	44	70	58	50	43	55	48	42	53	46	41	50	44	40	38
6	67	54	45	38	65	53	44	38	50	42	37	48	41	36	45	40	35	33
7	63	49	40	34	60	48	39	33	45	38	33	43	37	32	41	36	31	29
8	58	44	36	30	56	43	35	30	42	34	29	40	33	28	38	32	28	26
9	54	41	33	27	53	40	32	27	38	31	26	37	30	26	35	29	25	23
10	51	38	30	24	49	37	29	24	35	28	24	34	28	23	33	27	23	21

# IES INDOOR REPORT

PHOTOMETRIC FILENAME : FS-4-LS-8CS-DIM-UNV\_48W\_4000K\_.IES

## UGR TABLE - CORRECTED

### Reflectances

Ceiling Cavity	70	70	50	50	30	70	70	50	50	30
Walls	50	30	50	30	30	50	30	50	30	30
Floor Cavity	20	20	20	20	20	20	20	20	20	20

### Room Size UGR Viewed Crosswise

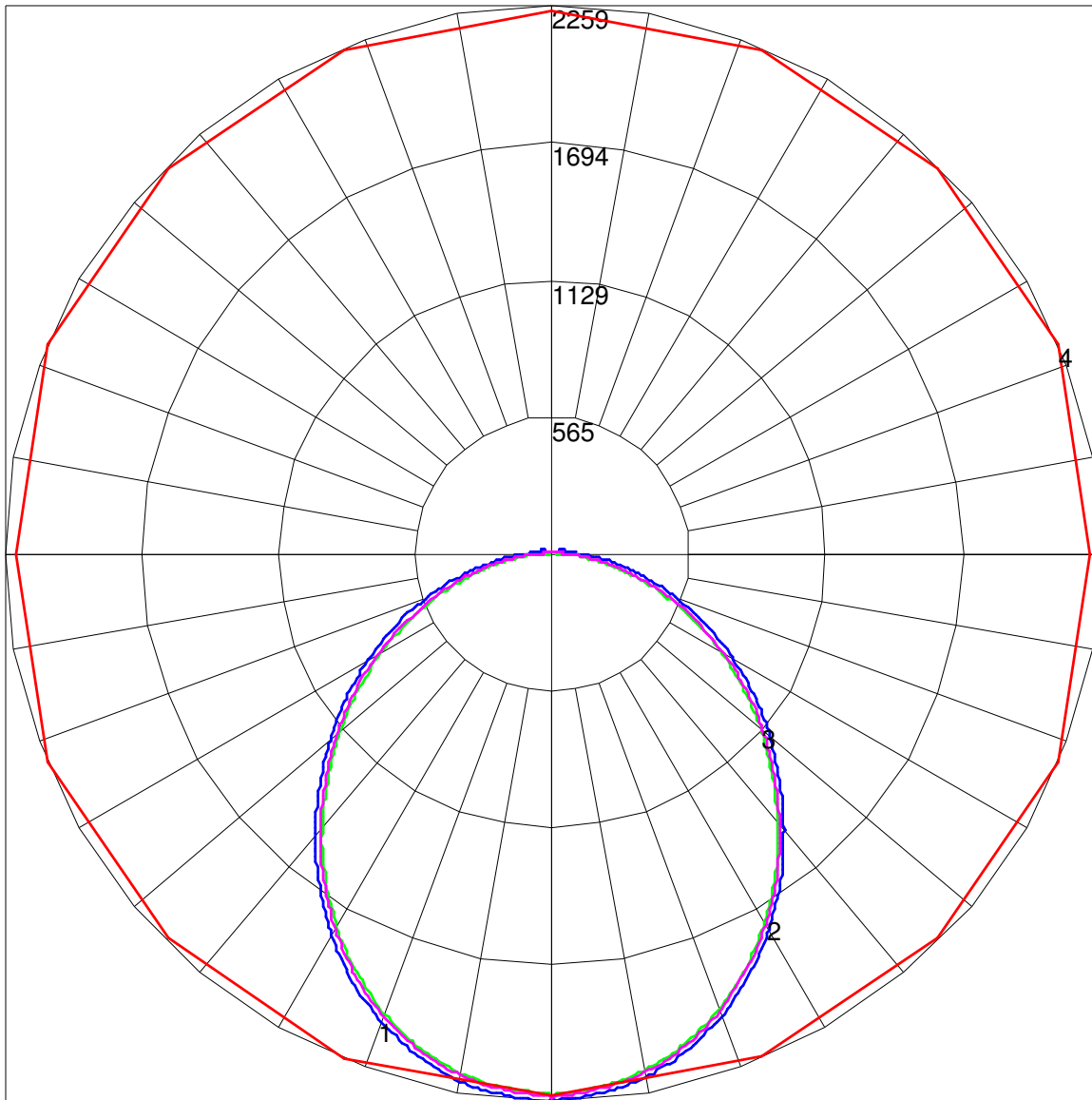
X=2H	Y=2H	21.6	23.2	22.1	23.6	24.1	24.1	25.6	24.5	26.1	26.5
	3H	23.1	24.5	23.6	25.0	25.5	26.5	27.9	27.0	28.3	28.9
	4H	23.6	24.9	24.1	25.4	25.9	27.6	28.9	28.1	29.4	30.0
	6H	23.9	25.1	24.4	25.6	26.2	28.7	30.0	29.3	30.5	31.0
	8H	24.0	25.1	24.5	25.7	26.2	29.3	30.5	29.9	31.0	31.6
	12H	24.0	25.1	24.5	25.6	26.2	29.9	31.1	30.5	31.6	32.2

### UGR Viewed Endwise

4H	2H	22.6	23.9	23.1	24.4	24.9	24.5	25.8	25.0	26.3	26.8
	3H	24.3	25.4	24.8	26.0	26.5	27.2	28.3	27.7	28.8	29.4
	4H	24.9	25.9	25.4	26.5	27.1	28.4	29.5	29.0	30.0	30.6
	6H	25.3	26.2	25.9	26.8	27.4	29.8	30.7	30.3	31.2	31.8
	8H	25.4	26.3	26.0	26.9	27.5	30.4	31.3	31.0	31.8	32.5
	12H	25.5	26.3	26.1	26.9	27.5	31.2	31.9	31.7	32.5	33.2
8H	4H	25.6	26.5	26.2	27.0	27.6	28.6	29.5	29.2	30.1	30.7
	6H	26.2	26.9	26.8	27.5	28.2	30.1	30.9	30.7	31.5	32.1
	8H	26.4	27.1	27.0	27.7	28.3	31.0	31.6	31.6	32.2	32.8
	12H	26.5	27.1	27.2	27.7	28.4	31.9	32.4	32.5	33.0	33.7
12H	4H	25.8	26.6	26.4	27.2	27.8	28.6	29.4	29.2	30.0	30.6
	6H	26.5	27.2	27.1	27.7	28.4	30.2	30.8	30.8	31.4	32.1
	8H	26.8	27.4	27.4	28.0	28.7	31.0	31.6	31.6	32.2	32.9

Maximum UGR = 33.7

POLAR GRAPH



Maximum Candela = 2258.539 Located At Horizontal Angle = 157.5, Vertical Angle = .5  
# 1 - Vertical Plane Through Horizontal Angles (157.5 - 337.5) (Through Max. Cd.)  
# 2 - Vertical Plane Through Horizontal Angles (5 - 185)  
# 3 - Vertical Plane Through Horizontal Angles (10 - 190)  
# 4 - Horizontal Cone Through Vertical Angle (.5) (Through Max. Cd.)