



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : HETG-AR14-L69-840-A-DIM-UNV.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002  
 [TEST]GEN FROM ORIGINAL TEST  
 [TESTLAB]Intertek  
 [ISSUE DATE] 03/18/2019  
 [MANUFAC] WILLIAMS INDOOR  
 [OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO.  
 [LUMCAT]HETG-AR14-L69-840-A-DIM-UNV  
 [LUMINAIRE]1X4 RECESSED GRID LUMINAIRE  
 [MORE] WITH FROSTED ACRYLIC LENS  
 [LAMP]LED  
 [LAMPCAT] HLM 80 CRI 4000K CCT  
 [\_SEARCH\_APPLICATION] INDOOR  
 [\_SEARCH\_SOURCETYPE] LED  
 [\_SEARCH\_MOUNTING] RECESSED

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	7208
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	135
Total Luminaire Watts	53.4
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.22
Spacing Criterion (90-270)	1.22
Spacing Criterion (Diagonal)	1.32
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	3.92 ft
Luminous Width (90-270)	0.92 ft
Luminous Height	0.00 ft

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

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	7447	7529	7403
55	6309	6638	6080
65	4995	5528	3775
75	3830	3794	1980
85	2684	1314	619

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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>	<u>202.5</u>
<b>0.0</b>	3018.300	3018.300	3018.300	3018.300	3018.300	3018.300	3018.300	3018.300	3018.300	3018.300
<b>2.5</b>	2969.010	2982.302	3011.654	3048.944	3079.035	3048.206	3007.777	2978.794	2965.687	2978.794
<b>5.0</b>	2959.965	2974.733	3008.516	3045.991	3074.420	3040.453	3001.870	2969.564	2953.503	2969.564
<b>7.5</b>	2943.904	2961.626	2996.147	3029.746	3053.560	3019.961	2986.732	2954.426	2935.966	2954.426
<b>10.0</b>	2923.228	2942.243	2972.702	2998.363	3016.639	2984.333	2958.857	2932.089	2910.306	2932.089
<b>12.5</b>	2895.907	2914.736	2934.304	2954.611	2971.779	2938.366	2918.613	2899.783	2877.261	2899.783
<b>15.0</b>	2858.616	2879.292	2889.815	2909.567	2921.936	2889.076	2868.216	2859.170	2835.910	2859.170
<b>17.5</b>	2812.834	2833.694	2839.417	2853.632	2860.093	2827.602	2815.419	2810.619	2789.020	2810.619
<b>20.0</b>	2759.852	2779.420	2782.374	2785.328	2788.835	2755.791	2755.237	2753.760	2734.377	2753.760
<b>22.5</b>	2701.517	2716.470	2713.701	2711.116	2716.285	2679.180	2683.056	2686.933	2670.134	2686.933
<b>25.0</b>	2633.951	2645.581	2634.874	2638.751	2647.058	2606.630	2602.015	2611.799	2599.615	2611.799
<b>27.5</b>	2555.494	2566.940	2550.140	2562.878	2563.063	2527.249	2515.619	2529.465	2520.419	2529.465
<b>30.0</b>	2466.514	2480.913	2463.376	2472.237	2469.283	2434.208	2427.747	2439.746	2430.885	2439.746
<b>32.5</b>	2367.750	2383.072	2373.288	2372.919	2362.581	2333.598	2335.075	2340.244	2330.275	2340.244
<b>35.0</b>	2260.494	2275.817	2271.202	2263.633	2249.049	2222.835	2230.034	2230.588	2220.989	2230.588
<b>37.5</b>	2146.962	2160.992	2159.331	2147.700	2133.486	2106.903	2115.948	2113.364	2106.349	2113.364
<b>40.0</b>	2025.492	2038.414	2040.075	2028.814	2013.308	1988.755	1995.585	1989.124	1983.032	1989.124
<b>42.5</b>	1897.560	1911.775	1914.544	1907.529	1887.407	1866.915	1870.054	1861.931	1857.685	1861.931
<b>45.0</b>	1765.936	1781.443	1785.504	1779.966	1755.598	1741.199	1740.830	1732.892	1724.954	1732.892
<b>47.5</b>	1630.436	1650.373	1655.727	1651.481	1620.098	1609.575	1609.022	1597.576	1584.284	1597.576
<b>50.0</b>	1495.858	1518.380	1528.903	1522.442	1486.444	1478.690	1479.244	1460.045	1444.723	1460.045
<b>52.5</b>	1354.266	1382.326	1402.817	1389.341	1334.144	1345.959	1354.820	1324.175	1305.715	1324.175
<b>55.0</b>	1213.597	1249.041	1276.916	1244.241	1169.476	1197.721	1231.319	1191.444	1166.707	1191.444
<b>57.5</b>	1077.542	1120.002	1154.707	1090.280	1009.054	1045.236	1110.771	1064.435	1031.022	1064.435
<b>60.0</b>	947.580	996.501	1034.898	940.934	838.663	892.198	990.409	943.334	901.059	943.334
<b>62.5</b>	824.079	878.907	907.521	781.989	678.794	737.130	863.031	830.540	779.404	830.540
<b>65.0</b>	707.962	769.436	783.466	631.905	534.987	592.214	743.406	725.315	666.426	725.315
<b>67.5</b>	599.783	667.903	661.811	497.143	411.670	462.991	621.936	628.028	563.416	628.028
<b>70.0</b>	501.758	573.200	542.925	381.764	309.953	351.304	504.896	536.648	468.713	536.648
<b>72.5</b>	413.147	484.589	431.977	284.477	230.388	259.186	396.717	450.807	383.056	450.807
<b>75.0</b>	332.475	396.533	329.336	206.204	171.868	187.559	297.953	365.150	305.338	365.150
<b>77.5</b>	258.817	312.722	235.926	146.577	131.808	139.377	209.712	285.400	236.110	285.400
<b>80.0</b>	191.805	233.341	152.669	104.671	92.672	99.133	137.900	209.343	173.898	209.343
<b>82.5</b>	128.485	157.468	87.688	62.027	48.920	55.566	78.457	140.669	121.101	140.669
<b>85.0</b>	78.457	83.996	38.398	22.706	18.091	19.384	31.937	72.550	72.735	72.550
<b>87.5</b>	37.475	24.737	10.153	8.307	6.646	7.015	8.676	17.907	33.967	17.907
<b>90.0</b>	4.984	0.554	0.000	0.000	0.000	0.000	0.000	0.000	2.769	0.000
<b>92.5</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>95.0</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>97.5</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>100.0</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>102.5</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>105.0</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>107.5</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>110.0</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>112.5</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>115.0</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>117.5</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>120.0</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>122.5</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>125.0</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>127.5</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>130.0</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>132.5</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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**CANDELA TABULATION - (Cont.)**

135.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
137.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
140.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
142.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
145.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
147.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
150.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
152.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
155.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
157.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
160.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
162.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
165.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
167.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
170.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
172.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
175.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
177.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
180.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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

	<u>225.0</u>	<u>247.5</u>	<u>270.0</u>	<u>292.5</u>	<u>315.0</u>	<u>337.5</u>	<u>360.0</u>
0.0	3018.300	3018.300	3018.300	3018.300	3018.300	3018.300	3018.300
2.5	3007.777	3048.206	3079.035	3048.944	3011.654	2982.302	2969.010
5.0	3001.870	3040.453	3074.420	3045.991	3008.516	2974.733	2959.965
7.5	2986.732	3019.961	3053.560	3029.746	2996.147	2961.626	2943.904
10.0	2958.857	2984.333	3016.639	2998.363	2972.702	2942.243	2923.228
12.5	2918.613	2938.366	2971.779	2954.611	2934.304	2914.736	2895.907
15.0	2868.216	2889.076	2921.936	2909.567	2889.815	2879.292	2858.616
17.5	2815.419	2827.602	2860.093	2853.632	2839.417	2833.694	2812.834
20.0	2755.237	2755.791	2788.835	2785.328	2782.374	2779.420	2759.852
22.5	2683.056	2679.180	2716.285	2711.116	2713.701	2716.470	2701.517
25.0	2602.015	2606.630	2647.058	2638.751	2634.874	2645.581	2633.951
27.5	2515.619	2527.249	2563.063	2562.878	2550.140	2566.940	2555.494
30.0	2427.747	2434.208	2469.283	2472.237	2463.376	2480.913	2466.514
32.5	2335.075	2333.598	2362.581	2372.919	2373.288	2383.072	2367.750
35.0	2230.034	2222.835	2249.049	2263.633	2271.202	2275.817	2260.494
37.5	2115.948	2106.903	2133.486	2147.700	2159.331	2160.992	2146.962
40.0	1995.585	1988.755	2013.308	2028.814	2040.075	2038.414	2025.492
42.5	1870.054	1866.915	1887.407	1907.529	1914.544	1911.775	1897.560
45.0	1740.830	1741.199	1755.598	1779.966	1785.504	1781.443	1765.936
47.5	1609.022	1609.575	1620.098	1651.481	1655.727	1650.373	1630.436
50.0	1479.244	1478.690	1486.444	1522.442	1528.903	1518.380	1495.858
52.5	1354.820	1345.959	1334.144	1389.341	1402.817	1382.326	1354.266
55.0	1231.319	1197.721	1169.476	1244.241	1276.916	1249.041	1213.597
57.5	1110.771	1045.236	1009.054	1090.280	1154.707	1120.002	1077.542
60.0	990.409	892.198	838.663	940.934	1034.898	996.501	947.580
62.5	863.031	737.130	678.794	781.989	907.521	878.907	824.079
65.0	743.406	592.214	534.987	631.905	783.466	769.436	707.962
67.5	621.936	462.991	411.670	497.143	661.811	667.903	599.783
70.0	504.896	351.304	309.953	381.764	542.925	573.200	501.758
72.5	396.717	259.186	230.388	284.477	431.977	484.589	413.147
75.0	297.953	187.559	171.868	206.204	329.336	396.533	332.475
77.5	209.712	139.377	131.808	146.577	235.926	312.722	258.817
80.0	137.900	99.133	92.672	104.671	152.669	233.341	191.805

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CANDELA TABULATION - (Cont.)

82.5	78.457	55.566	48.920	62.027	87.688	157.468	128.485
85.0	31.937	19.384	18.091	22.706	38.398	83.996	78.457
87.5	8.676	7.015	6.646	8.307	10.153	24.737	37.475
90.0	0.000	0.000	0.000	0.000	0.000	0.554	4.984
92.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
95.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
97.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
102.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
105.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
107.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
110.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
112.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
115.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
117.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
120.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
122.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
125.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
127.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
130.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
132.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
135.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
137.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
140.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
142.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
145.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
147.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
150.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
152.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
155.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
157.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
160.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
162.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
165.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
167.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
170.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
172.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
175.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
177.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
180.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	1098.51	N.A.	15.20
0-30	2307.01	N.A.	32.00
0-40	3710.42	N.A.	51.50
0-60	6153.76	N.A.	85.40
0-80	7144.85	N.A.	99.10
0-90	7207.58	N.A.	100.00
10-90	6921.74	N.A.	96.00
20-40	2611.91	N.A.	36.20
20-50	3966.12	N.A.	55.00
40-70	3125.93	N.A.	43.40
60-80	991.09	N.A.	13.80
70-80	308.51	N.A.	4.30
80-90	62.73	N.A.	0.90
90-110	0.08	N.A.	0.00
90-120	0.08	N.A.	0.00
90-130	0.08	N.A.	0.00
90-150	0.08	N.A.	0.00
90-180	0.08	N.A.	0.00
110-180	0.00	N.A.	0.00
0-180	7207.66	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	285.84
10-20	812.67
20-30	1208.5
30-40	1403.41
40-50	1354.21
50-60	1089.13
60-70	682.59
70-80	308.51
80-90	62.73
90-100	0.08
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

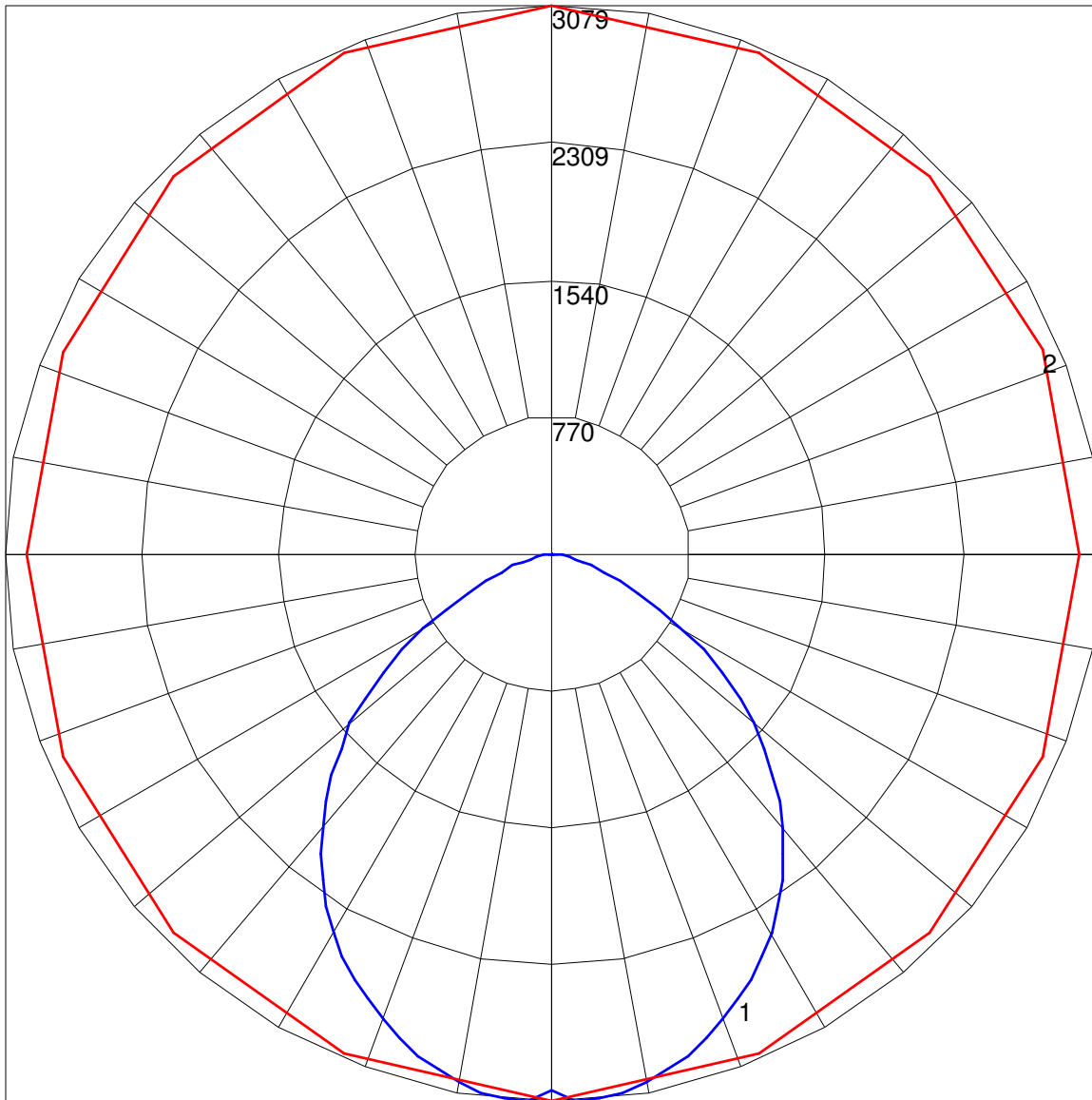
**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : HETG-AR14-L69-840-A-DIM-UNV.IES**

**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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	106	102	98	107	103	100	97	99	96	94	95	93	91	92	90	88	86
2	101	93	87	82	98	91	86	81	88	83	79	85	81	77	82	78	76	73
3	93	83	75	69	90	81	74	69	78	72	67	76	70	66	73	69	65	63
4	85	74	66	59	83	73	65	59	70	63	58	68	62	57	66	61	57	55
5	79	66	58	52	76	65	57	51	63	56	51	61	55	50	59	54	50	48
6	73	60	52	45	71	59	51	45	57	50	45	56	49	44	54	48	44	42
7	68	55	46	40	66	54	46	40	52	45	40	51	44	40	50	44	39	37
8	63	50	42	36	61	49	42	36	48	41	36	47	40	36	46	40	35	34
9	59	46	38	33	58	45	38	33	44	37	32	43	37	32	42	36	32	30
10	55	43	35	30	54	42	35	30	41	34	30	40	34	29	39	33	29	28

POLAR GRAPH



Maximum Candela = 3079.035 Located At Horizontal Angle = 90, Vertical Angle = 2.5  
# 1 - Vertical Plane Through Horizontal Angles (90 - 270) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (2.5) (Through Max. Cd.)