



**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : HETG-AR14-L38-835-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-L38-835-A-DIM-UNV  
[LUMINAIRE]1X4 RECESSED GRID LUMINAIRE  
[MORE] WITH FROSTED ACRYLIC LENS  
[LAMP]LED  
[LAMPCAT] HLM 80 CRI 3500K 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	3888
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	131
Total Luminaire Watts	29.7
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	4017	4062	3994
55	3404	3581	3280
65	2695	2982	2036
75	2066	2047	1068
85	1448	709	334

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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>	1628.299	1628.299	1628.299	1628.299	1628.299	1628.299	1628.299	1628.299	1628.299	1628.299
<b>2.5</b>	1601.709	1608.879	1624.714	1644.831	1661.064	1644.433	1622.622	1606.987	1599.916	1606.987
<b>5.0</b>	1596.829	1604.796	1623.021	1643.238	1658.574	1640.250	1619.436	1602.007	1593.343	1602.007
<b>7.5</b>	1588.164	1597.725	1616.348	1634.474	1647.321	1629.195	1611.269	1593.841	1583.882	1593.841
<b>10.0</b>	1577.010	1587.268	1603.700	1617.543	1627.403	1609.975	1596.231	1581.790	1570.039	1581.790
<b>12.5</b>	1562.271	1572.429	1582.986	1593.940	1603.202	1585.177	1574.520	1564.362	1552.212	1564.362
<b>15.0</b>	1542.154	1553.308	1558.984	1569.640	1576.313	1558.586	1547.332	1542.452	1529.904	1542.452
<b>17.5</b>	1517.455	1528.709	1531.796	1539.465	1542.950	1525.422	1518.850	1516.260	1504.608	1516.260
<b>20.0</b>	1488.873	1499.429	1501.023	1502.616	1504.509	1486.682	1486.383	1485.586	1475.129	1485.586
<b>22.5</b>	1457.402	1465.469	1463.975	1462.581	1465.370	1445.352	1447.443	1449.535	1440.472	1449.535
<b>25.0</b>	1420.952	1427.227	1421.450	1423.542	1428.023	1406.213	1403.723	1409.002	1402.429	1409.002
<b>27.5</b>	1378.627	1384.801	1375.738	1382.610	1382.710	1363.389	1357.115	1364.584	1359.704	1364.584
<b>30.0</b>	1330.624	1338.392	1328.931	1333.711	1332.118	1313.196	1309.710	1316.184	1311.403	1316.184
<b>32.5</b>	1277.343	1285.609	1280.331	1280.132	1274.555	1258.919	1259.716	1262.504	1257.127	1262.504
<b>35.0</b>	1219.481	1227.747	1225.258	1221.175	1213.307	1199.165	1203.049	1203.348	1198.169	1203.348
<b>37.5</b>	1158.234	1165.802	1164.906	1158.632	1150.963	1136.622	1141.502	1140.108	1136.324	1140.108
<b>40.0</b>	1092.703	1099.675	1100.571	1094.496	1086.130	1072.885	1076.570	1073.084	1069.797	1073.084
<b>42.5</b>	1023.687	1031.356	1032.850	1029.065	1018.210	1007.155	1008.848	1004.466	1002.176	1004.466
<b>45.0</b>	952.679	961.045	963.236	960.248	947.102	939.334	939.135	934.853	930.570	934.853
<b>47.5</b>	879.580	890.336	893.224	890.934	874.003	868.327	868.028	861.853	854.683	861.853
<b>50.0</b>	806.979	819.129	824.806	821.320	801.900	797.717	798.016	787.659	779.393	787.659
<b>52.5</b>	730.593	745.731	756.786	749.516	719.738	726.112	730.892	714.360	704.401	714.360
<b>55.0</b>	654.706	673.827	688.865	671.238	630.904	646.141	664.266	642.755	629.410	642.755
<b>57.5</b>	581.308	604.213	622.936	588.179	544.360	563.879	599.234	574.237	556.211	574.237
<b>60.0</b>	511.196	537.588	558.302	507.611	452.438	481.319	534.301	508.906	486.100	508.906
<b>62.5</b>	444.570	474.149	489.585	421.864	366.193	397.664	465.584	448.056	420.470	448.056
<b>65.0</b>	381.928	415.092	422.661	340.897	288.612	319.485	401.050	391.290	359.520	391.290
<b>67.5</b>	323.568	360.317	357.031	268.196	222.086	249.772	335.519	338.806	303.949	338.806
<b>70.0</b>	270.686	309.227	292.895	205.952	167.212	189.520	272.379	289.509	252.859	289.509
<b>72.5</b>	222.883	261.424	233.041	153.468	124.289	139.825	214.019	243.199	206.650	243.199
<b>75.0</b>	179.362	213.920	177.669	111.242	92.718	101.184	160.739	196.989	164.722	196.989
<b>77.5</b>	139.625	168.706	127.276	79.075	71.107	75.191	113.134	153.966	127.376	153.966
<b>80.0</b>	103.474	125.882	82.361	56.468	49.994	53.480	74.394	112.935	93.814	112.935
<b>82.5</b>	69.315	84.950	47.305	33.462	26.391	29.977	42.326	75.888	65.331	75.888
<b>85.0</b>	42.326	45.314	20.715	12.250	9.760	10.457	17.229	39.139	39.239	39.139
<b>87.5</b>	20.217	13.345	5.477	4.482	3.585	3.784	4.681	9.660	18.325	9.660
<b>90.0</b>	2.689	0.299	0.000	0.000	0.000	0.000	0.000	0.000	1.494	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	1628.299	1628.299	1628.299	1628.299	1628.299	1628.299	1628.299
2.5	1622.622	1644.433	1661.064	1644.831	1624.714	1608.879	1601.709
5.0	1619.436	1640.250	1658.574	1643.238	1623.021	1604.796	1596.829
7.5	1611.269	1629.195	1647.321	1634.474	1616.348	1597.725	1588.164
10.0	1596.231	1609.975	1627.403	1617.543	1603.700	1587.268	1577.010
12.5	1574.520	1585.177	1603.202	1593.940	1582.986	1572.429	1562.271
15.0	1547.332	1558.586	1576.313	1569.640	1558.984	1553.308	1542.154
17.5	1518.850	1525.422	1542.950	1539.465	1531.796	1528.709	1517.455
20.0	1486.383	1486.682	1504.509	1502.616	1501.023	1499.429	1488.873
22.5	1447.443	1445.352	1465.370	1462.581	1463.975	1465.469	1457.402
25.0	1403.723	1406.213	1428.023	1423.542	1421.450	1427.227	1420.952
27.5	1357.115	1363.389	1382.710	1382.610	1375.738	1384.801	1378.627
30.0	1309.710	1313.196	1332.118	1333.711	1328.931	1338.392	1330.624
32.5	1259.716	1258.919	1274.555	1280.132	1280.331	1285.609	1277.343
35.0	1203.049	1199.165	1213.307	1221.175	1225.258	1227.747	1219.481
37.5	1141.502	1136.622	1150.963	1158.632	1164.906	1165.802	1158.234
40.0	1076.570	1072.885	1086.130	1094.496	1100.571	1099.675	1092.703
42.5	1008.848	1007.155	1018.210	1029.065	1032.850	1031.356	1023.687
45.0	939.135	939.334	947.102	960.248	963.236	961.045	952.679
47.5	868.028	868.327	874.003	890.934	893.224	890.336	879.580
50.0	798.016	797.717	801.900	821.320	824.806	819.129	806.979
52.5	730.892	726.112	719.738	749.516	756.786	745.731	730.593
55.0	664.266	646.141	630.904	671.238	688.865	673.827	654.706
57.5	599.234	563.879	544.360	588.179	622.936	604.213	581.308
60.0	534.301	481.319	452.438	507.611	558.302	537.588	511.196
62.5	465.584	397.664	366.193	421.864	489.585	474.149	444.570
65.0	401.050	319.485	288.612	340.897	422.661	415.092	381.928
67.5	335.519	249.772	222.086	268.196	357.031	360.317	323.568
70.0	272.379	189.520	167.212	205.952	292.895	309.227	270.686
72.5	214.019	139.825	124.289	153.468	233.041	261.424	222.883
75.0	160.739	101.184	92.718	111.242	177.669	213.920	179.362
77.5	113.134	75.191	71.107	79.075	127.276	168.706	139.625
80.0	74.394	53.480	49.994	56.468	82.361	125.882	103.474

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**CANDELA TABULATION - (Cont.)**

82.5	42.326	29.977	26.391	33.462	47.305	84.950	69.315
85.0	17.229	10.457	9.760	12.250	20.715	45.314	42.326
87.5	4.681	3.784	3.585	4.482	5.477	13.345	20.217
90.0	0.000	0.000	0.000	0.000	0.000	0.299	2.689
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	592.62	N.A.	15.20
0-30	1244.57	N.A.	32.00
0-40	2001.68	N.A.	51.50
0-60	3319.8	N.A.	85.40
0-80	3854.47	N.A.	99.10
0-90	3888.31	N.A.	100.00
10-90	3734.11	N.A.	96.00
20-40	1409.06	N.A.	36.20
20-50	2139.62	N.A.	55.00
40-70	1686.36	N.A.	43.40
60-80	534.67	N.A.	13.80
70-80	166.43	N.A.	4.30
80-90	33.84	N.A.	0.90
90-110	0.04	N.A.	0.00
90-120	0.04	N.A.	0.00
90-130	0.04	N.A.	0.00
90-150	0.04	N.A.	0.00
90-180	0.04	N.A.	0.00
110-180	0.00	N.A.	0.00
0-180	3888.36	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	154.20
10-20	438.41
20-30	651.96
30-40	757.11
40-50	730.56
50-60	587.56
60-70	368.24
70-80	166.43
80-90	33.84
90-100	0.04
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

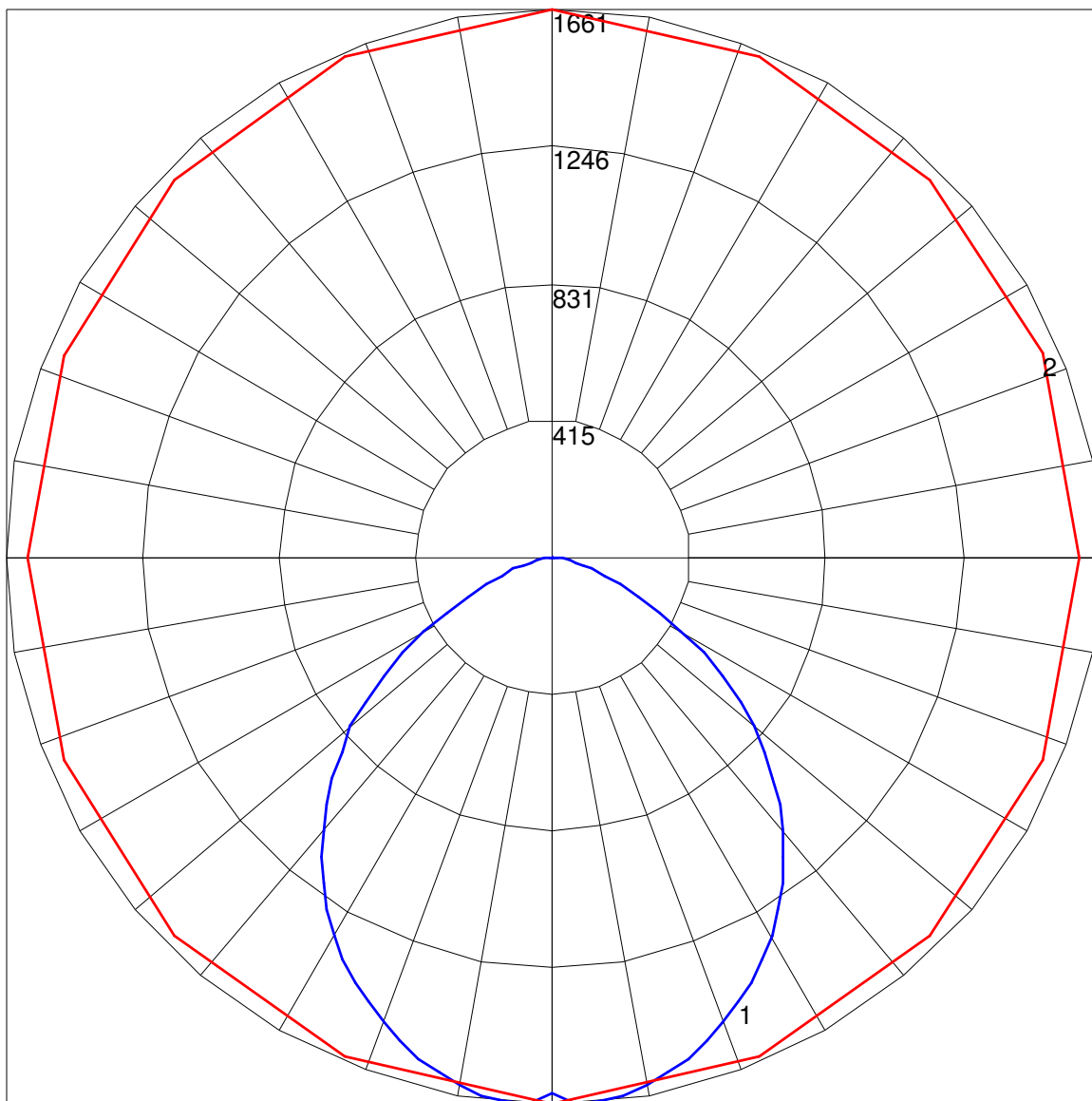
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**COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD**

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 = 1661.064 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.)