



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : IHB4-LED-09L-DA-50.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] 3587

[TESTLAB] TUV SUD America

[TESTDATE] 12/3/2018 3:03:31 PM

[ISSUEDATE] 04/19/21

[MANUFAC] LSI INDUSTRIES, INC

[LUMCAT] IHB4-LED-09L-DA-50

[OTHER] TEST PROCEDURE: IESNA LM-79-08

[ABSOLUTE] NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED

[OTHER] SCALED FROM ORIGINAL TEST DATA

[SEARCH\_SOURCETYPE] LED

[SEARCH\_APPLICATION] Indoor

[SEARCH\_COLORTEMP] 5000

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	8907
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	146
Total Luminaire Watts	61
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.20
Spacing Criterion (90-270)	1.26
Spacing Criterion (Diagonal)	1.32
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	4.00 ft
Luminous Width (90-270)	0.60 ft
Luminous Height	0.00 ft



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

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	12235	12564	12996
55	10782	11256	11303
65	8981	9761	9241
75	7765	8446	7155
85	9301	9430	4954

**IES INDOOR REPORT**  
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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>	3320.772	3320.772	3320.772	3320.772	3320.772	3320.772	3320.772	3320.772	3320.772	3320.772
<b>2.5</b>	3346.428	3338.832	3302.762	3287.479	3283.408	3292.388	3310.903	3346.398	3359.509	3346.398
<b>5.0</b>	3326.873	3323.509	3287.933	3275.085	3273.307	3283.307	3302.226	3336.337	3352.347	3336.337
<b>7.5</b>	3299.075	3296.842	3265.368	3257.095	3261.035	3272.186	3287.206	3319.176	3336.246	3319.176
<b>10.0</b>	3258.328	3261.156	3235.358	3230.419	3237.510	3249.429	3264.641	3292.075	3310.964	3292.075
<b>12.5</b>	3207.348	3215.005	3195.752	3195.874	3205.954	3220.894	3230.641	3255.509	3279.560	3255.509
<b>15.0</b>	3147.046	3162.561	3146.339	3157.510	3170.955	3184.975	3190.732	3209.914	3235.186	3209.914
<b>17.5</b>	3080.693	3102.975	3090.430	3109.157	3127.884	3140.056	3138.399	3157.945	3182.672	3157.945
<b>20.0</b>	3007.683	3035.986	3029.481	3055.279	3077.743	3086.359	3083.076	3098.460	3120.379	3098.460
<b>22.5</b>	2932.017	2956.381	2957.785	2991.431	3017.643	3024.138	3018.188	3026.673	3046.834	3026.673
<b>25.0</b>	2843.331	2868.462	2875.987	2916.482	2948.724	2952.522	2944.249	2943.472	2969.512	2943.472
<b>27.5</b>	2742.665	2774.614	2786.513	2832.937	2870.199	2874.795	2858.886	2854.573	2884.118	2854.573
<b>30.0</b>	2634.292	2677.888	2690.979	2739.615	2782.574	2782.978	2764.170	2759.938	2796.897	2759.938
<b>32.5</b>	2541.970	2578.636	2593.242	2640.221	2684.261	2683.716	2666.514	2661.858	2698.635	2661.858
<b>35.0</b>	2427.334	2472.182	2487.859	2531.828	2577.990	2575.949	2560.959	2557.929	2587.161	2557.929
<b>37.5</b>	2313.264	2356.274	2370.870	2413.738	2458.071	2457.273	2446.001	2443.092	2470.455	2443.092
<b>40.0</b>	2190.538	2232.336	2244.437	2286.972	2329.153	2329.941	2320.901	2316.194	2352.224	2316.194
<b>42.5</b>	2061.842	2105.509	2115.064	2153.841	2193.871	2195.720	2189.073	2188.437	2233.386	2188.437
<b>45.0</b>	1930.803	1979.661	1982.701	2013.580	2050.903	2055.165	2057.903	2064.347	2115.973	2064.347
<b>47.5</b>	1799.006	1851.824	1852.430	1872.157	1901.510	1909.732	1926.813	1938.904	1993.711	1938.904
<b>50.0</b>	1665.118	1719.158	1717.421	1726.673	1749.653	1765.006	1789.127	1806.339	1859.379	1806.339
<b>52.5</b>	1522.786	1577.129	1579.442	1580.947	1597.826	1617.149	1649.492	1669.643	1721.865	1669.643
<b>55.0</b>	1380.161	1436.231	1440.827	1434.534	1446.898	1468.786	1510.746	1533.665	1584.442	1533.665
<b>57.5</b>	1247.424	1305.222	1306.818	1292.515	1297.050	1327.343	1373.666	1400.443	1451.190	1400.443
<b>60.0</b>	1117.910	1176.445	1175.082	1153.213	1152.092	1188.526	1239.849	1270.576	1320.373	1270.576
<b>62.5</b>	978.891	1045.790	1049.234	1020.638	1010.224	1051.992	1116.850	1142.516	1193.304	1142.516
<b>65.0</b>	847.074	914.033	920.669	882.397	871.589	916.750	985.386	1014.709	1058.375	1014.709
<b>67.5</b>	731.115	793.135	802.741	761.832	745.570	790.751	859.680	875.306	911.993	875.306
<b>70.0</b>	627.985	680.762	688.924	649.025	626.904	676.681	745.378	754.964	784.620	754.964
<b>72.5</b>	535.289	581.137	584.046	540.895	516.642	567.894	634.328	646.692	673.086	646.692
<b>75.0</b>	448.501	489.218	487.835	441.855	413.300	467.219	534.935	549.955	577.076	549.955
<b>77.5</b>	370.027	407.603	402.330	352.038	319.846	374.078	444.421	461.198	489.390	461.198
<b>80.0</b>	300.371	331.129	321.452	270.220	235.705	291.109	359.644	379.532	408.663	379.532
<b>82.5</b>	237.685	261.937	247.877	197.413	161.352	216.665	283.321	306.210	331.341	306.210
<b>85.0</b>	180.908	199.382	183.423	134.049	96.363	150.463	215.018	239.503	260.099	239.503
<b>87.5</b>	131.595	145.837	127.625	80.434	41.212	95.666	156.443	180.665	201.675	180.665
<b>90.0</b>	107.918	111.151	91.898	45.050	8.000	55.090	106.393	131.484	150.777	131.484
<b>92.5</b>	97.646	99.484	77.605	35.020	3.424	38.687	83.919	106.332	116.444	106.332
<b>95.0</b>	89.363	89.757	68.767	29.485	3.525	33.060	73.474	95.979	105.797	95.979
<b>97.5</b>	82.807	82.232	61.696	25.959	3.323	29.313	66.363	87.888	97.080	87.888
<b>100.0</b>	77.474	76.393	56.858	23.788	2.848	26.858	61.383	81.393	89.979	81.393
<b>102.5</b>	73.131	71.302	52.979	22.091	2.394	24.646	57.181	77.060	84.646	77.060
<b>105.0</b>	69.727	67.585	49.959	20.626	1.960	22.778	53.899	73.111	80.666	73.111
<b>107.5</b>	66.545	64.777	47.555	19.182	1.798	21.313	50.868	69.737	77.292	69.737
<b>110.0</b>	64.101	61.858	45.282	18.485	1.434	19.939	48.434	66.686	73.616	66.686
<b>112.5</b>	61.565	59.414	43.232	17.485	1.414	19.020	45.979	63.353	70.626	63.353
<b>115.0</b>	59.121	56.888	41.353	17.606	1.424	17.980	43.818	60.494	67.252	60.494
<b>117.5</b>	56.596	54.424	39.717	17.424	1.727	18.141	41.969	57.828	64.202	57.828
<b>120.0</b>	54.767	52.343	37.990	16.818	1.768	17.828	40.151	55.272	61.484	55.272
<b>122.5</b>	52.596	50.212	36.707	16.364	2.212	17.242	38.454	53.090	58.919	53.090
<b>125.0</b>	50.777	48.424	35.293	15.515	2.626	17.040	37.192	50.888	56.666	50.888
<b>127.5</b>	48.606	46.394	34.060	15.222	3.091	16.747	36.050	48.717	54.383	48.717
<b>130.0</b>	46.788	44.383	33.000	14.858	3.677	16.838	34.161	46.596	51.737	46.596
<b>132.5</b>	44.949	42.636	31.454	14.444	4.333	16.717	33.929	44.454	48.888	44.454

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**CANDELA TABULATION - (Cont.)**

135.0	43.434	40.929	29.353	14.232	5.061	16.727	32.980	42.535	46.686	42.535
137.5	41.969	39.727	27.434	13.879	5.596	16.566	31.798	41.161	44.616	41.161
140.0	41.030	38.384	25.515	14.030	6.444	16.737	30.767	39.868	42.767	39.868
142.5	39.394	36.555	23.970	13.838	7.111	16.525	29.576	38.444	41.464	38.444
145.0	37.515	35.091	22.858	13.909	7.717	16.525	28.182	36.687	39.919	36.687
147.5	35.606	33.081	22.242	14.030	8.495	16.555	27.161	34.939	38.151	34.939
150.0	34.040	30.646	21.071	14.050	9.000	16.424	26.040	32.909	35.767	32.909
152.5	31.949	28.535	20.535	13.959	9.465	16.374	25.242	31.283	34.030	31.283
155.0	29.656	25.939	19.667	13.959	10.162	16.303	23.666	29.485	31.576	29.485
157.5	27.485	23.707	18.828	13.858	10.747	16.252	22.586	27.778	29.272	27.778
160.0	25.515	21.545	18.101	13.727	11.303	16.141	21.535	25.646	27.030	25.646
162.5	23.333	19.616	17.444	13.626	11.757	16.071	20.404	23.767	25.030	23.767
165.0	21.202	18.141	16.768	13.757	12.283	15.838	19.222	21.980	23.131	21.980
167.5	19.687	16.667	16.050	13.636	12.374	15.495	18.394	20.424	21.545	20.424
170.0	17.596	15.717	15.273	13.465	12.970	15.394	17.394	19.030	20.141	19.030
172.5	15.768	14.444	14.343	13.333	13.162	15.040	16.535	17.576	18.414	17.576
175.0	13.959	13.616	13.949	13.293	13.525	14.596	15.606	16.111	17.040	16.111
177.5	13.131	13.182	13.656	13.444	13.717	13.899	14.545	14.707	15.646	14.707
180.0	13.131	13.131	13.131	13.131	13.131	13.131	13.131	13.131	13.131	13.131

**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	3320.772	3320.772	3320.772	3320.772	3320.772	3320.772	3320.772
2.5	3310.903	3292.388	3283.408	3287.479	3302.762	3338.832	3346.428
5.0	3302.226	3283.307	3273.307	3275.085	3287.933	3323.509	3326.873
7.5	3287.206	3272.186	3261.035	3257.095	3265.368	3296.842	3299.075
10.0	3264.641	3249.429	3237.510	3230.419	3235.358	3261.156	3258.328
12.5	3230.641	3220.894	3205.954	3195.874	3195.752	3215.005	3207.348
15.0	3190.732	3184.975	3170.955	3157.510	3146.339	3162.561	3147.046
17.5	3138.399	3140.056	3127.884	3109.157	3090.430	3102.975	3080.693
20.0	3083.076	3086.359	3077.743	3055.279	3029.481	3035.986	3007.683
22.5	3018.188	3024.138	3017.643	2991.431	2957.785	2956.381	2932.017
25.0	2944.249	2952.522	2948.724	2916.482	2875.987	2868.462	2843.331
27.5	2858.886	2874.795	2870.199	2832.937	2786.513	2774.614	2742.665
30.0	2764.170	2782.978	2782.574	2739.615	2690.979	2677.888	2634.292
32.5	2666.514	2683.716	2684.261	2640.221	2593.242	2578.636	2541.970
35.0	2560.959	2575.949	2577.990	2531.828	2487.859	2472.182	2427.334
37.5	2446.001	2457.273	2458.071	2413.738	2370.870	2356.274	2313.264
40.0	2320.901	2329.941	2329.153	2286.972	2244.437	2232.336	2190.538
42.5	2189.073	2195.720	2193.871	2153.841	2115.064	2105.509	2061.842
45.0	2057.903	2055.165	2050.903	2013.580	1982.701	1979.661	1930.803
47.5	1926.813	1909.732	1901.510	1872.157	1852.430	1851.824	1799.006
50.0	1789.127	1765.006	1749.653	1726.673	1717.421	1719.158	1665.118
52.5	1649.492	1617.149	1597.826	1580.947	1579.442	1577.129	1522.786
55.0	1510.746	1468.786	1446.898	1434.534	1440.827	1436.231	1380.161
57.5	1373.666	1327.343	1297.050	1292.515	1306.818	1305.222	1247.424
60.0	1239.849	1188.526	1152.092	1153.213	1175.082	1176.445	1117.910
62.5	1116.850	1051.992	1010.224	1020.638	1049.234	1045.790	978.891
65.0	985.386	916.750	871.589	882.397	920.669	914.033	847.074
67.5	859.680	790.751	745.570	761.832	802.741	793.135	731.115
70.0	745.378	676.681	626.904	649.025	688.924	680.762	627.985
72.5	634.328	567.894	516.642	540.895	584.046	581.137	535.289
75.0	534.935	467.219	413.300	441.855	487.835	489.218	448.501
77.5	444.421	374.078	319.846	352.038	402.330	407.603	370.027
80.0	359.644	291.109	235.705	270.220	321.452	331.129	300.371

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**CANDELA TABULATION - (Cont.)**

82.5	283.321	216.665	161.352	197.413	247.877	261.937	237.685
85.0	215.018	150.463	96.363	134.049	183.423	199.382	180.908
87.5	156.443	95.666	41.212	80.434	127.625	145.837	131.595
90.0	106.393	55.090	8.000	45.050	91.898	111.151	107.918
92.5	83.919	38.687	3.424	35.020	77.605	99.484	97.646
95.0	73.474	33.060	3.525	29.485	68.767	89.757	89.363
97.5	66.363	29.313	3.323	25.959	61.696	82.232	82.807
100.0	61.383	26.858	2.848	23.788	56.858	76.393	77.474
102.5	57.181	24.646	2.394	22.091	52.979	71.302	73.131
105.0	53.899	22.778	1.960	20.626	49.959	67.585	69.727
107.5	50.868	21.313	1.798	19.182	47.555	64.777	66.545
110.0	48.434	19.939	1.434	18.485	45.282	61.858	64.101
112.5	45.979	19.020	1.414	17.485	43.232	59.414	61.565
115.0	43.818	17.980	1.424	17.606	41.353	56.888	59.121
117.5	41.969	18.141	1.727	17.424	39.717	54.424	56.596
120.0	40.151	17.828	1.768	16.818	37.990	52.343	54.767
122.5	38.454	17.242	2.212	16.364	36.707	50.212	52.596
125.0	37.192	17.040	2.626	15.515	35.293	48.424	50.777
127.5	36.050	16.747	3.091	15.222	34.060	46.394	48.606
130.0	34.161	16.838	3.677	14.858	33.000	44.383	46.788
132.5	33.929	16.717	4.333	14.444	31.454	42.636	44.949
135.0	32.980	16.727	5.061	14.232	29.353	40.929	43.434
137.5	31.798	16.566	5.596	13.879	27.434	39.727	41.969
140.0	30.767	16.737	6.444	14.030	25.515	38.384	41.030
142.5	29.576	16.525	7.111	13.838	23.970	36.555	39.394
145.0	28.182	16.525	7.717	13.909	22.858	35.091	37.515
147.5	27.161	16.555	8.495	14.030	22.242	33.081	35.606
150.0	26.040	16.424	9.000	14.050	21.071	30.646	34.040
152.5	25.242	16.374	9.465	13.959	20.535	28.535	31.949
155.0	23.666	16.303	10.162	13.959	19.667	25.939	29.656
157.5	22.586	16.252	10.747	13.858	18.828	23.707	27.485
160.0	21.535	16.141	11.303	13.727	18.101	21.545	25.515
162.5	20.404	16.071	11.757	13.626	17.444	19.616	23.333
165.0	19.222	15.838	12.283	13.757	16.768	18.141	21.202
167.5	18.394	15.495	12.374	13.636	16.050	16.667	19.687
170.0	17.394	15.394	12.970	13.465	15.273	15.717	17.596
172.5	16.535	15.040	13.162	13.333	14.343	14.444	15.768
175.0	15.606	14.596	13.525	13.293	13.949	13.616	13.959
177.5	14.545	13.899	13.717	13.444	13.656	13.182	13.131
180.0	13.131	13.131	13.131	13.131	13.131	13.131	13.131

**IES INDOOR REPORT**  
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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	1209.94	N.A.	13.60
0-30	2553.97	N.A.	28.70
0-40	4135.88	N.A.	46.40
0-60	7015.56	N.A.	78.80
0-80	8463.32	N.A.	95.00
0-90	8667.7	N.A.	97.30
10-90	8353.85	N.A.	93.80
20-40	2925.94	N.A.	32.80
20-50	4489.74	N.A.	50.40
40-70	3806.53	N.A.	42.70
60-80	1447.77	N.A.	16.30
70-80	520.91	N.A.	5.80
80-90	204.38	N.A.	2.30
90-110	118.11	N.A.	1.30
90-120	155.87	N.A.	1.70
90-130	185.18	N.A.	2.10
90-150	222.96	N.A.	2.50
90-180	239.30	N.A.	2.70
110-180	121.19	N.A.	1.40
0-180	8907.00	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	313.85
10-20	896.09
20-30	1344.03
30-40	1581.91
40-50	1563.8
50-60	1315.88
60-70	926.86
70-80	520.91
80-90	204.38
90-100	69.45
100-110	48.67
110-120	37.76
120-130	29.31
130-140	22.05
140-150	15.72
150-160	9.89
160-170	5.02
170-180	1.43

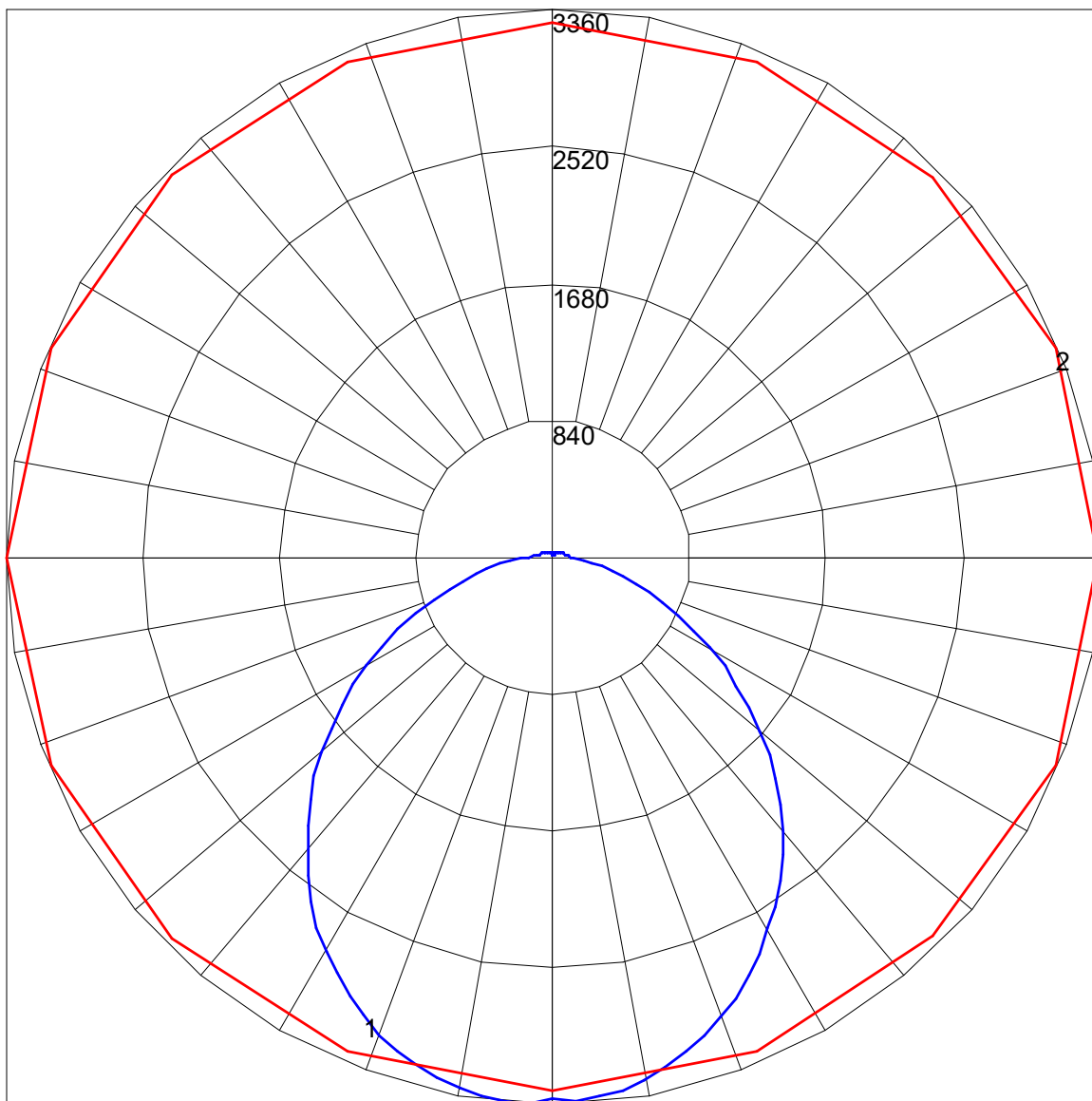
**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : IHB4-LED-09L-DA-50.IES**

**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	118	118	118	118	115	115	115	115	110	110	110	104	104	104	100	100	100	97
1	108	104	99	96	105	101	97	94	96	93	90	92	89	87	88	86	84	82
2	99	91	84	79	96	89	83	77	85	80	75	81	77	73	78	74	71	69
3	90	80	72	66	88	78	71	65	75	69	63	72	67	62	69	64	61	58
4	83	71	63	56	80	70	62	55	67	60	54	64	58	53	62	57	52	50
5	76	64	55	48	74	62	54	48	60	53	47	58	52	47	56	50	46	44
6	71	58	49	42	69	56	48	42	54	47	42	52	46	41	51	45	40	38
7	66	52	44	38	64	51	43	37	50	42	37	48	41	37	46	41	36	34
8	61	48	39	34	59	47	39	33	45	38	33	44	37	33	43	37	32	30
9	57	44	36	30	56	43	35	30	42	35	30	41	34	30	39	34	29	27
10	54	41	33	28	52	40	32	27	39	32	27	38	31	27	37	31	27	25

POLAR GRAPH



Maximum Candela = 3359.509 Located At Horizontal Angle = 180, Vertical Angle = 2.5

# 1 - Vertical Plane Through Horizontal Angles (180 - 0) (Through Max. Cd.)

# 2 - Horizontal Cone Through Vertical Angle (2.5) (Through Max. Cd.)