

**IES INDOOR REPORT****PHOTOMETRIC FILENAME : SGE4LEDOS-20L35KE1-AR4224OSMWSO.IES****DESCRIPTION INFORMATION (From Photometric File)**

IESNA:LM-63-2002  
[TEST]201410982\_M-20L-Gen3  
[TESTLAB] OSRAM SYLVANIA  
[TESTDATE] 8/11/2014  
[ISSUEDATE]8/11/2014  
[UPDATE]11/14/2016  
[MANUFAC]Spectrum Lighting  
[LUMCAT]SGE4LEDOS-20L-35K-E1-AR4224OS-MW-SO  
[LUMINAIRE]4" Diam., Open Aperture LED Downlight  
[OTHER]Deep Profile, Matte White Lower Cone  
[OTHER]Integral, Regressed Solite Lens  
[OTHER]54.7 Degree Beam Angle  
[LAMP]N/A  
[LAMPCAT]N/A  
[OTHER]Total Luminaire Watts is approximate  
[OTHER]Photometric measurements taken at 120VAC  
[OTHER]Output Multipliers: 40K x 1.0, 30K x 1.0, 27K x 0.946  
[OTHER]Catalog number designation update: 25W is now called 20L  
[OTHER]This report updated by Spectrum Lighting, scaled from 30L, Gen2

**CHARACTERISTICS**

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	1569
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	78
Total Luminaire Watts	20.24
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	0.86
Spacing Criterion (90-270)	0.86
Spacing Criterion (Diagonal)	0.84
Basic Luminous Shape	Circular
Luminous Length (0-180)	0.33 ft (Diameter)
Luminous Width (90-270)	0.33 ft (Diameter)
Luminous Height	0.00 ft

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

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	36147	35982	35971
55	29899	29786	29837
65	26379	26437	26564
75	23952	23977	24118
85	17727	18396	18135

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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>	1478.722	1478.722	1478.722	1478.722	1478.722	1478.722	1478.722	1478.722	1478.722	1478.722
<b>2.5</b>	1472.686	1471.441	1471.535	1472.881	1475.031	1472.881	1471.535	1471.441	1472.686	1471.441
<b>5.0</b>	1454.999	1452.857	1452.755	1453.378	1455.911	1453.378	1452.755	1452.857	1454.999	1452.857
<b>7.5</b>	1421.079	1420.840	1420.384	1419.096	1422.389	1419.096	1420.384	1420.840	1421.079	1420.840
<b>10.0</b>	1370.275	1371.455	1372.287	1372.975	1375.971	1372.975	1372.287	1371.455	1370.275	1371.455
<b>12.5</b>	1312.119	1313.819	1313.132	1314.550	1316.620	1314.550	1313.132	1313.819	1312.119	1313.819
<b>15.0</b>	1252.298	1252.095	1253.072	1253.412	1254.954	1253.412	1253.072	1252.095	1252.298	1252.095
<b>17.5</b>	1189.140	1186.882	1187.693	1187.758	1186.607	1187.758	1187.693	1186.882	1189.140	1186.882
<b>20.0</b>	1098.417	1098.063	1096.196	1098.041	1099.431	1098.041	1096.196	1098.063	1098.417	1098.063
<b>22.5</b>	989.529	988.784	984.189	984.963	986.620	984.963	984.189	988.784	989.529	988.784
<b>25.0</b>	864.105	861.398	860.067	860.103	859.756	860.103	860.067	861.398	864.105	861.398
<b>27.5</b>	732.782	728.686	729.345	730.206	728.737	730.206	729.345	728.686	732.782	728.686
<b>30.0</b>	601.395	599.564	600.237	602.451	602.582	602.451	600.237	599.564	601.395	599.564
<b>32.5</b>	481.420	481.318	482.404	485.140	484.163	485.140	482.404	481.318	481.420	481.318
<b>35.0</b>	383.785	382.280	383.850	385.956	385.776	385.956	383.850	382.280	383.785	382.280
<b>37.5</b>	311.415	311.278	311.669	312.385	312.971	312.385	311.669	311.278	311.415	311.278
<b>40.0</b>	262.356	262.508	262.298	263.268	263.514	263.268	262.298	262.508	262.356	262.508
<b>42.5</b>	228.906	228.523	228.038	228.573	228.371	228.573	228.038	228.523	228.906	228.523
<b>45.0</b>	203.287	202.752	202.361	202.383	202.296	202.383	202.361	202.752	203.287	202.752
<b>47.5</b>	182.597	182.365	182.090	182.068	182.083	182.068	182.090	182.365	182.597	182.365
<b>50.0</b>	166.393	166.263	165.944	166.024	166.075	166.024	165.944	166.263	166.393	166.263
<b>52.5</b>	151.521	151.311	150.797	150.964	150.891	150.964	150.797	151.311	151.521	151.311
<b>55.0</b>	136.396	136.085	135.882	136.135	136.113	136.135	135.882	136.085	136.396	136.085
<b>57.5</b>	122.768	122.740	122.711	123.015	123.065	123.015	122.711	122.740	122.768	122.740
<b>60.0</b>	109.973	110.147	110.176	110.589	110.625	110.589	110.176	110.147	109.973	110.147
<b>62.5</b>	98.923	98.959	98.966	99.205	99.277	99.205	98.966	98.959	98.923	98.959
<b>65.0</b>	88.668	88.733	88.863	89.174	89.290	89.174	88.863	88.733	88.668	88.733
<b>67.5</b>	78.572	78.695	78.811	79.093	79.303	79.093	78.811	78.695	78.572	78.695
<b>70.0</b>	68.788	68.867	68.983	69.186	69.359	69.186	68.983	68.867	68.788	68.867
<b>72.5</b>	59.177	59.083	59.213	59.394	59.459	59.394	59.213	59.083	59.177	59.083
<b>75.0</b>	49.306	49.248	49.356	49.805	49.646	49.805	49.356	49.248	49.306	49.248
<b>77.5</b>	39.680	39.789	39.919	40.382	40.202	40.382	39.919	39.789	39.680	39.789
<b>80.0</b>	30.562	30.598	30.678	30.996	30.866	30.996	30.678	30.598	30.562	30.598
<b>82.5</b>	21.479	21.595	21.581	21.776	21.581	21.776	21.581	21.595	21.479	21.595
<b>85.0</b>	12.288	12.723	12.752	12.824	12.571	12.824	12.752	12.723	12.288	12.723
<b>87.5</b>	3.763	4.306	4.444	4.429	4.313	4.429	4.444	4.306	3.763	4.306
<b>90.0</b>	0.210	0.608	0.709	0.601	0.470	0.601	0.709	0.608	0.210	0.608
<b>92.5</b>	0.217	0.478	0.564	0.449	0.318	0.449	0.564	0.478	0.217	0.478
<b>95.0</b>	0.239	0.478	0.593	0.470	0.311	0.470	0.593	0.478	0.239	0.478
<b>97.5</b>	0.347	0.492	0.593	0.499	0.347	0.499	0.593	0.492	0.347	0.492
<b>100.0</b>	0.463	0.528	0.651	0.572	0.441	0.572	0.651	0.528	0.463	0.528
<b>102.5</b>	0.572	0.557	0.702	0.644	0.485	0.644	0.702	0.557	0.572	0.557
<b>105.0</b>	0.601	0.550	0.702	0.716	0.485	0.716	0.702	0.550	0.601	0.550
<b>107.5</b>	0.427	0.528	0.572	0.789	0.528	0.789	0.572	0.528	0.427	0.528
<b>110.0</b>	0.275	0.492	0.456	0.811	0.579	0.811	0.456	0.492	0.275	0.492
<b>112.5</b>	0.261	0.478	0.434	0.688	0.644	0.688	0.434	0.478	0.261	0.478
<b>115.0</b>	0.253	0.434	0.463	0.651	0.716	0.651	0.463	0.434	0.253	0.434
<b>117.5</b>	0.253	0.420	0.492	0.702	0.789	0.702	0.492	0.420	0.253	0.420
<b>120.0</b>	0.253	0.441	0.499	0.745	0.847	0.745	0.499	0.441	0.253	0.441
<b>122.5</b>	0.246	0.398	0.507	0.709	0.803	0.709	0.507	0.398	0.246	0.398
<b>125.0</b>	0.253	0.384	0.550	0.695	0.666	0.695	0.550	0.384	0.253	0.384
<b>127.5</b>	0.275	0.362	0.586	0.695	0.615	0.695	0.586	0.362	0.275	0.362
<b>130.0</b>	0.297	0.376	0.608	0.709	0.637	0.709	0.608	0.376	0.297	0.376
<b>132.5</b>	0.326	0.405	0.630	0.745	0.680	0.745	0.630	0.405	0.326	0.405

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**CANDELA TABULATION - (Cont.)**

135.0	0.369	0.456	0.688	0.803	0.731	0.803	0.688	0.456	0.369	0.456
137.5	0.470	0.521	0.760	0.832	0.789	0.832	0.760	0.521	0.470	0.521
140.0	0.586	0.630	0.839	0.912	0.868	0.912	0.839	0.630	0.586	0.630
142.5	0.745	0.782	0.948	1.013	0.977	1.013	0.948	0.782	0.745	0.782
145.0	0.977	0.991	1.100	1.187	1.151	1.187	1.100	0.991	0.977	0.991
147.5	1.223	1.238	1.317	1.411	1.375	1.411	1.317	1.238	1.223	1.238
150.0	1.520	1.549	1.607	1.665	1.650	1.665	1.607	1.549	1.520	1.549
152.5	1.845	1.882	1.932	1.968	1.976	1.968	1.932	1.882	1.845	1.882
155.0	2.251	2.280	2.294	2.352	2.366	2.352	2.294	2.280	2.251	2.280
157.5	2.750	2.772	2.757	2.851	2.859	2.851	2.757	2.772	2.750	2.772
160.0	3.539	3.539	3.546	3.611	3.633	3.611	3.546	3.539	3.539	3.539
162.5	4.610	4.646	4.603	4.646	4.704	4.646	4.603	4.646	4.610	4.646
165.0	5.920	5.876	5.876	5.913	5.920	5.913	5.876	5.876	5.920	5.876
167.5	7.505	7.541	7.541	7.541	7.498	7.541	7.541	7.541	7.505	7.541
170.0	9.336	9.372	9.350	9.314	9.321	9.314	9.350	9.372	9.336	9.372
172.5	11.000	11.036	11.036	10.986	10.986	10.986	11.036	11.036	11.000	11.036
175.0	12.209	12.122	11.847	11.818	11.919	11.818	11.847	12.122	12.209	12.122
177.5	12.144	12.136	12.115	12.042	11.992	12.042	12.115	12.136	12.144	12.136
180.0	12.238	12.238	12.238	12.238	12.238	12.238	12.238	12.238	12.238	12.238

**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	1478.722	1478.722	1478.722	1478.722	1478.722	1478.722	1478.722
2.5	1471.535	1472.881	1475.031	1472.881	1471.535	1471.441	1472.686
5.0	1452.755	1453.378	1455.911	1453.378	1452.755	1452.857	1454.999
7.5	1420.384	1419.096	1422.389	1419.096	1420.384	1420.840	1421.079
10.0	1372.287	1372.975	1375.971	1372.975	1372.287	1371.455	1370.275
12.5	1313.132	1314.550	1316.620	1314.550	1313.132	1313.819	1312.119
15.0	1253.072	1253.412	1254.954	1253.412	1253.072	1252.095	1252.298
17.5	1187.693	1187.758	1186.607	1187.758	1187.693	1186.882	1189.140
20.0	1096.196	1098.041	1099.431	1098.041	1096.196	1098.063	1098.417
22.5	984.189	984.963	986.620	984.963	984.189	988.784	989.529
25.0	860.067	860.103	859.756	860.103	860.067	861.398	864.105
27.5	729.345	730.206	728.737	730.206	729.345	728.686	732.782
30.0	600.237	602.451	602.582	602.451	600.237	599.564	601.395
32.5	482.404	485.140	484.163	485.140	482.404	481.318	481.420
35.0	383.850	385.956	385.776	385.956	383.850	382.280	383.785
37.5	311.669	312.385	312.971	312.385	311.669	311.278	311.415
40.0	262.298	263.268	263.514	263.268	262.298	262.508	262.356
42.5	228.038	228.573	228.371	228.573	228.038	228.523	228.906
45.0	202.361	202.383	202.296	202.383	202.361	202.752	203.287
47.5	182.090	182.068	182.083	182.068	182.090	182.365	182.597
50.0	165.944	166.024	166.075	166.024	165.944	166.263	166.393
52.5	150.797	150.964	150.891	150.964	150.797	151.311	151.521
55.0	135.882	136.135	136.113	136.135	135.882	136.085	136.396
57.5	122.711	123.015	123.065	123.015	122.711	122.740	122.768
60.0	110.176	110.589	110.625	110.589	110.176	110.147	109.973
62.5	98.966	99.205	99.277	99.205	98.966	98.959	98.923
65.0	88.863	89.174	89.290	89.174	88.863	88.733	88.668
67.5	78.811	79.093	79.303	79.093	78.811	78.695	78.572
70.0	68.983	69.186	69.359	69.186	68.983	68.867	68.788
72.5	59.213	59.394	59.459	59.394	59.213	59.083	59.177
75.0	49.356	49.805	49.646	49.805	49.356	49.248	49.306
77.5	39.919	40.382	40.202	40.382	39.919	39.789	39.680
80.0	30.678	30.996	30.866	30.996	30.678	30.598	30.562

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**CANDELA TABULATION - (Cont.)**

82.5	21.581	21.776	21.581	21.776	21.581	21.595	21.479
85.0	12.752	12.824	12.571	12.824	12.752	12.723	12.288
87.5	4.444	4.429	4.313	4.429	4.444	4.306	3.763
90.0	0.709	0.601	0.470	0.601	0.709	0.608	0.210
92.5	0.564	0.449	0.318	0.449	0.564	0.478	0.217
95.0	0.593	0.470	0.311	0.470	0.593	0.478	0.239
97.5	0.593	0.499	0.347	0.499	0.593	0.492	0.347
100.0	0.651	0.572	0.441	0.572	0.651	0.528	0.463
102.5	0.702	0.644	0.485	0.644	0.702	0.557	0.572
105.0	0.702	0.716	0.485	0.716	0.702	0.550	0.601
107.5	0.572	0.789	0.528	0.789	0.572	0.528	0.427
110.0	0.456	0.811	0.579	0.811	0.456	0.492	0.275
112.5	0.434	0.688	0.644	0.688	0.434	0.478	0.261
115.0	0.463	0.651	0.716	0.651	0.463	0.434	0.253
117.5	0.492	0.702	0.789	0.702	0.492	0.420	0.253
120.0	0.499	0.745	0.847	0.745	0.499	0.441	0.253
122.5	0.507	0.709	0.803	0.709	0.507	0.398	0.246
125.0	0.550	0.695	0.666	0.695	0.550	0.384	0.253
127.5	0.586	0.695	0.615	0.695	0.586	0.362	0.275
130.0	0.608	0.709	0.637	0.709	0.608	0.376	0.297
132.5	0.630	0.745	0.680	0.745	0.630	0.405	0.326
135.0	0.688	0.803	0.731	0.803	0.688	0.456	0.369
137.5	0.760	0.832	0.789	0.832	0.760	0.521	0.470
140.0	0.839	0.912	0.868	0.912	0.839	0.630	0.586
142.5	0.948	1.013	0.977	1.013	0.948	0.782	0.745
145.0	1.100	1.187	1.151	1.187	1.100	0.991	0.977
147.5	1.317	1.411	1.375	1.411	1.317	1.238	1.223
150.0	1.607	1.665	1.650	1.665	1.607	1.549	1.520
152.5	1.932	1.968	1.976	1.968	1.932	1.882	1.845
155.0	2.294	2.352	2.366	2.352	2.294	2.280	2.251
157.5	2.757	2.851	2.859	2.851	2.757	2.772	2.750
160.0	3.546	3.611	3.633	3.611	3.546	3.539	3.539
162.5	4.603	4.646	4.704	4.646	4.603	4.646	4.610
165.0	5.876	5.913	5.920	5.913	5.876	5.876	5.920
167.5	7.541	7.541	7.498	7.541	7.541	7.541	7.505
170.0	9.350	9.314	9.321	9.314	9.350	9.372	9.336
172.5	11.036	10.986	10.986	10.986	11.036	11.036	11.000
175.0	11.847	11.818	11.919	11.818	11.847	12.122	12.209
177.5	12.115	12.042	11.992	12.042	12.115	12.136	12.144
180.0	12.238	12.238	12.238	12.238	12.238	12.238	12.238

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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	485.95	N.A.	31.00
0-30	875.64	N.A.	55.80
0-40	1124.47	N.A.	71.70
0-60	1406.18	N.A.	89.60
0-80	1546.79	N.A.	98.60
0-90	1561.54	N.A.	99.50
10-90	1425.36	N.A.	90.90
20-40	638.52	N.A.	40.70
20-50	797.76	N.A.	50.90
40-70	369.94	N.A.	23.60
60-80	140.60	N.A.	9.00
70-80	52.38	N.A.	3.30
80-90	14.76	N.A.	0.90
90-110	1.16	N.A.	0.10
90-120	1.68	N.A.	0.10
90-130	2.16	N.A.	0.10
90-150	3.34	N.A.	0.20
90-180	7.14	N.A.	0.50
110-180	5.98	N.A.	0.40
0-180	1568.68	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

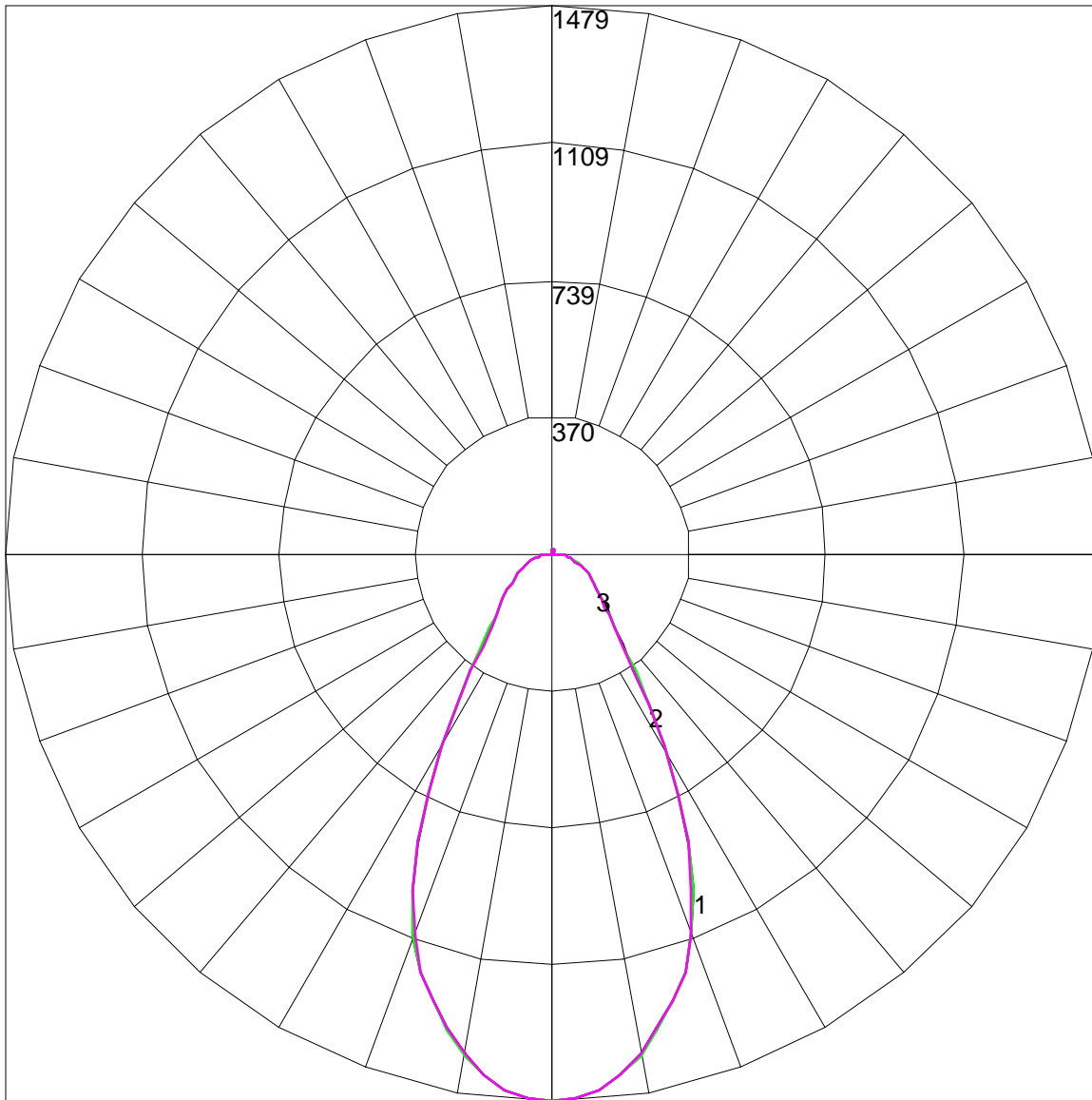
Zone	Lumens
0-10	136.18
10-20	349.77
20-30	389.69
30-40	248.83
40-50	159.24
50-60	122.48
60-70	88.22
70-80	52.38
80-90	14.76
90-100	0.53
100-110	0.63
110-120	0.52
120-130	0.48
130-140	0.49
140-150	0.70
150-160	1.09
160-170	1.65
170-180	1.06

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	111	108	104	102	109	105	102	100	101	99	97	97	95	94	94	92	91	89
2	104	98	92	88	102	96	91	87	92	88	85	89	86	83	86	84	81	79
3	97	89	83	78	95	88	82	77	85	80	76	82	78	75	80	76	73	71
4	91	82	75	70	89	81	74	69	78	73	68	76	71	67	74	70	67	65
5	86	76	68	63	84	75	68	63	73	67	62	71	66	62	69	65	61	59
6	81	70	63	58	79	69	62	58	68	62	57	66	61	57	65	60	56	55
7	76	65	58	53	75	65	58	53	63	57	53	62	56	52	61	56	52	50
8	72	61	54	49	71	60	54	49	59	53	49	58	53	49	57	52	48	47
9	68	57	51	46	67	57	50	46	56	50	46	55	49	45	54	49	45	44
10	65	54	47	43	64	54	47	43	53	47	43	52	46	43	51	46	42	41

POLAR GRAPH



Maximum Candela = 1478.722 Located At Horizontal Angle = 0, Vertical Angle = 0

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

# 2 - Vertical Plane Through Horizontal Angles (90 - 270)

# 3 - Vertical Plane Through Horizontal Angles (45 - 225)