

## IES INDOOR REPORT

PHOTOMETRIC FILENAME : FSN OPAL 14 BOWL.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] LLI-18210-3

[TESTLAB] LightLab International (www.LightLabInternational.com)

[MANUFAC] Justice Design Group, Los Angeles, CA 90071

[LUMCAT] Artisan Glass (FSN) - Opal Glass (OPAL) 14" Bowl

[LUMINAIRE] Justice Design Group - Pendant mount luminaire. Product ID: FSN OPAL 14" Bowl

[MORE] Extruded base plate with frosted glass bowl lens.

[MORE] 42 LEDs with 21 in each of two arrays with white plastic lenses.

[MORE] No driver.

[MORE] Operating at 120 VAC and 60 Hz.

[OTHER] Absolute test - lamp lumens value set to -1

[MORE] NA conventions used for C0 plane alignment and C-plane rotation direction.

[MORE] The sample was tested at a distance of 8m.

[MORE] This IES file created by LightLab/LSA Report program version 3.820a.

[DATE] This file created: Monday, August 6, 2018 2:20:59 PM

[ISSUEDATE] Monday, August 6, 2018 2:20:59 PM

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	1449
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	64
Total Luminaire Watts	22.7
Ballast Factor	1.00
CIE Type	General Diffuse
Spacing Criterion (0-180)	N.A.
Spacing Criterion (90-270)	N.A.
Spacing Criterion (Diagonal)	N.A.
Basic Luminous Shape	Circular w/ Sides
Luminous Length (0-180)	0.36 m (Diameter)
Luminous Width (90-270)	0.36 m (Diameter)
Luminous Height	0.10 m

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : FSN OPAL 14 BOWL.IES**

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

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	1603	1603	1603
55	1443	1443	1443
65	1277	1277	1277
75	1111	1111	1111
85	971	971	971

IES INDOOR REPORT  
PHOTOMETRIC FILENAME : FSN OPAL 14 BOWL.IES

CANDELA TABULATION

	<u>0</u>
0.0	225.796
0.5	225.785
1.0	225.764
1.5	225.710
2.0	225.636
2.5	225.529
3.0	225.433
3.5	225.304
4.0	225.144
4.5	224.995
5.0	224.802
5.5	224.610
6.0	224.354
6.5	224.119
7.0	223.841
7.5	223.552
8.0	223.243
8.5	222.911
9.0	222.559
9.5	222.206
10.0	221.822
10.5	221.448
11.0	221.031
11.5	220.572
12.0	220.123
12.5	219.653
13.0	219.151
13.5	218.638
14.0	218.115
14.5	217.559
15.0	216.993
15.5	216.406
16.0	215.775
16.5	215.145
17.0	214.504
17.5	213.842
18.0	213.137
18.5	212.464
19.0	211.716
19.5	210.979
20.0	210.231
20.5	209.451
21.0	208.660
21.5	207.838
22.0	207.015
22.5	206.161
23.0	205.317
23.5	204.419
24.0	203.511
24.5	202.614
25.0	201.706
25.5	200.744
26.0	199.772
26.5	198.821

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : FSN OPAL 14 BOWL.IES**

**CANDELA TABULATION - (Cont.)**

<b>27.0</b>	197.806
<b>27.5</b>	196.834
<b>28.0</b>	195.809
<b>28.5</b>	194.772
<b>29.0</b>	193.736
<b>29.5</b>	192.679
<b>30.0</b>	191.610
<b>30.5</b>	190.499
<b>31.0</b>	189.410
<b>31.5</b>	188.277
<b>32.0</b>	187.188
<b>32.5</b>	186.034
<b>33.0</b>	184.869
<b>33.5</b>	183.716
<b>34.0</b>	182.540
<b>34.5</b>	181.344
<b>35.0</b>	180.126
<b>35.5</b>	178.919
<b>36.0</b>	177.701
<b>36.5</b>	176.472
<b>37.0</b>	175.233
<b>37.5</b>	173.973
<b>38.0</b>	172.723
<b>38.5</b>	171.430
<b>39.0</b>	170.159
<b>39.5</b>	168.866
<b>40.0</b>	167.552
<b>40.5</b>	166.227
<b>41.0</b>	164.946
<b>41.5</b>	163.589
<b>42.0</b>	162.232
<b>42.5</b>	160.897
<b>43.0</b>	159.540
<b>43.5</b>	158.183
<b>44.0</b>	156.794
<b>44.5</b>	155.427
<b>45.0</b>	154.049
<b>45.5</b>	152.681
<b>46.0</b>	151.303
<b>46.5</b>	149.882
<b>47.0</b>	148.483
<b>47.5</b>	147.051
<b>48.0</b>	145.663
<b>48.5</b>	144.210
<b>49.0</b>	142.800
<b>49.5</b>	141.347
<b>50.0</b>	139.979
<b>50.5</b>	138.516
<b>51.0</b>	137.052
<b>51.5</b>	135.621
<b>52.0</b>	134.136
<b>52.5</b>	132.704
<b>53.0</b>	131.219
<b>53.5</b>	129.766
<b>54.0</b>	128.281
<b>54.5</b>	126.850

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : FSN OPAL 14 BOWL.IES**

**CANDELA TABULATION - (Cont.)**

<b>55.0</b>	125.365
<b>55.5</b>	123.891
<b>56.0</b>	122.416
<b>56.5</b>	120.921
<b>57.0</b>	119.436
<b>57.5</b>	117.951
<b>58.0</b>	116.466
<b>58.5</b>	114.970
<b>59.0</b>	113.550
<b>59.5</b>	112.043
<b>60.0</b>	110.548
<b>60.5</b>	109.084
<b>61.0</b>	107.578
<b>61.5</b>	106.082
<b>62.0</b>	104.587
<b>62.5</b>	103.123
<b>63.0</b>	101.617
<b>63.5</b>	100.185
<b>64.0</b>	98.690
<b>64.5</b>	97.226
<b>65.0</b>	95.762
<b>65.5</b>	94.267
<b>66.0</b>	92.835
<b>66.5</b>	91.382
<b>67.0</b>	89.919
<b>67.5</b>	88.466
<b>68.0</b>	87.066
<b>68.5</b>	85.614
<b>69.0</b>	84.193
<b>69.5</b>	82.783
<b>70.0</b>	81.351
<b>70.5</b>	79.952
<b>71.0</b>	78.531
<b>71.5</b>	77.131
<b>72.0</b>	75.732
<b>72.5</b>	74.396
<b>73.0</b>	72.997
<b>73.5</b>	71.651
<b>74.0</b>	70.305
<b>74.5</b>	68.937
<b>75.0</b>	67.634
<b>75.5</b>	66.299
<b>76.0</b>	64.985
<b>76.5</b>	63.671
<b>77.0</b>	62.410
<b>77.5</b>	61.117
<b>78.0</b>	59.835
<b>78.5</b>	58.596
<b>79.0</b>	57.346
<b>79.5</b>	56.118
<b>80.0</b>	54.900
<b>80.5</b>	53.703
<b>81.0</b>	52.507
<b>81.5</b>	51.353
<b>82.0</b>	50.178
<b>82.5</b>	49.046

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : FSN OPAL 14 BOWL.IES**

**CANDELA TABULATION - (Cont.)**

<b>83.0</b>	47.945
<b>83.5</b>	46.802
<b>84.0</b>	45.734
<b>84.5</b>	44.634
<b>85.0</b>	43.587
<b>85.5</b>	42.540
<b>86.0</b>	41.546
<b>86.5</b>	40.521
<b>87.0</b>	39.538
<b>87.5</b>	38.576
<b>88.0</b>	37.604
<b>88.5</b>	36.707
<b>89.0</b>	35.788
<b>89.5</b>	34.923
<b>90.0</b>	34.196
<b>90.5</b>	33.619
<b>91.0</b>	33.149
<b>91.5</b>	32.743
<b>92.0</b>	32.412
<b>92.5</b>	32.060
<b>93.0</b>	31.771
<b>93.5</b>	31.504
<b>94.0</b>	31.258
<b>94.5</b>	31.088
<b>95.0</b>	31.120
<b>95.5</b>	31.440
<b>96.0</b>	32.124
<b>96.5</b>	33.149
<b>97.0</b>	34.431
<b>97.5</b>	35.948
<b>98.0</b>	37.423
<b>98.5</b>	38.843
<b>99.0</b>	40.339
<b>99.5</b>	41.728
<b>100.0</b>	43.159
<b>100.5</b>	44.719
<b>101.0</b>	46.321
<b>101.5</b>	48.031
<b>102.0</b>	49.708
<b>102.5</b>	51.439
<b>103.0</b>	53.073
<b>103.5</b>	54.740
<b>104.0</b>	56.342
<b>104.5</b>	57.977
<b>105.0</b>	59.611
<b>105.5</b>	61.224
<b>106.0</b>	62.859
<b>106.5</b>	64.472
<b>107.0</b>	66.106
<b>107.5</b>	67.677
<b>108.0</b>	69.311
<b>108.5</b>	70.860
<b>109.0</b>	72.441
<b>109.5</b>	73.990
<b>110.0</b>	75.561
<b>110.5</b>	77.163

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : FSN OPAL 14 BOWL.IES**

**CANDELA TABULATION - (Cont.)**

<b>111.0</b>	78.808
<b>111.5</b>	80.496
<b>112.0</b>	82.163
<b>112.5</b>	83.936
<b>113.0</b>	85.656
<b>113.5</b>	87.483
<b>114.0</b>	89.374
<b>114.5</b>	91.276
<b>115.0</b>	93.231
<b>115.5</b>	95.186
<b>116.0</b>	97.194
<b>116.5</b>	99.202
<b>117.0</b>	101.328
<b>117.5</b>	103.379
<b>118.0</b>	105.495
<b>118.5</b>	107.674
<b>119.0</b>	109.853
<b>119.5</b>	112.043
<b>120.0</b>	114.223
<b>120.5</b>	116.455
<b>121.0</b>	118.656
<b>121.5</b>	120.910
<b>122.0</b>	123.100
<b>122.5</b>	125.354
<b>123.0</b>	127.576
<b>123.5</b>	129.745
<b>124.0</b>	131.946
<b>124.5</b>	134.114
<b>125.0</b>	136.262
<b>125.5</b>	138.345
<b>126.0</b>	140.407
<b>126.5</b>	142.362
<b>127.0</b>	144.317
<b>127.5</b>	146.250
<b>128.0</b>	148.120
<b>128.5</b>	149.915
<b>129.0</b>	151.720
<b>129.5</b>	153.451
<b>130.0</b>	155.128
<b>130.5</b>	156.752
<b>131.0</b>	158.279
<b>131.5</b>	159.839
<b>132.0</b>	161.324
<b>132.5</b>	162.723
<b>133.0</b>	164.102
<b>133.5</b>	165.405
<b>134.0</b>	166.687
<b>134.5</b>	167.905
<b>135.0</b>	169.048
<b>135.5</b>	170.159
<b>136.0</b>	171.206
<b>136.5</b>	172.242
<b>137.0</b>	173.203
<b>137.5</b>	174.122
<b>138.0</b>	174.998
<b>138.5</b>	175.864

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : FSN OPAL 14 BOWL.IES**

**CANDELA TABULATION - (Cont.)**

<b>139.0</b>	176.643
<b>139.5</b>	177.370
<b>140.0</b>	178.107
<b>140.5</b>	178.748
<b>141.0</b>	179.389
<b>141.5</b>	179.977
<b>142.0</b>	180.521
<b>142.5</b>	181.066
<b>143.0</b>	181.547
<b>143.5</b>	182.006
<b>144.0</b>	182.476
<b>144.5</b>	182.861
<b>145.0</b>	183.267
<b>145.5</b>	183.598
<b>146.0</b>	183.972
<b>146.5</b>	184.292
<b>147.0</b>	184.602
<b>147.5</b>	184.880
<b>148.0</b>	185.147
<b>148.5</b>	185.414
<b>149.0</b>	185.703
<b>149.5</b>	185.970
<b>150.0</b>	186.226
<b>150.5</b>	186.482
<b>151.0</b>	186.760
<b>151.5</b>	187.006
<b>152.0</b>	187.273
<b>152.5</b>	187.540
<b>153.0</b>	187.786
<b>153.5</b>	188.010
<b>154.0</b>	188.245
<b>154.5</b>	188.469
<b>155.0</b>	188.672
<b>155.5</b>	188.907
<b>156.0</b>	189.132
<b>156.5</b>	189.356
<b>157.0</b>	189.581
<b>157.5</b>	189.773
<b>158.0</b>	190.019
<b>158.5</b>	190.232
<b>159.0</b>	190.457
<b>159.5</b>	190.702
<b>160.0</b>	190.937
<b>160.5</b>	191.183
<b>161.0</b>	191.407
<b>161.5</b>	191.632
<b>162.0</b>	191.856
<b>162.5</b>	192.123
<b>163.0</b>	192.358
<b>163.5</b>	192.647
<b>164.0</b>	192.946
<b>164.5</b>	193.095
<b>165.0</b>	193.063
<b>165.5</b>	192.882
<b>166.0</b>	192.412
<b>166.5</b>	191.610



**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : FSN OPAL 14 BOWL.IES**

**CANDELA TABULATION - (Cont.)**

<b>167.0</b>	190.595
<b>167.5</b>	189.121
<b>168.0</b>	187.369
<b>168.5</b>	185.457
<b>169.0</b>	183.171
<b>169.5</b>	180.682
<b>170.0</b>	177.979
<b>170.5</b>	175.084
<b>171.0</b>	171.975
<b>171.5</b>	168.888
<b>172.0</b>	165.629
<b>172.5</b>	162.328
<b>173.0</b>	158.984
<b>173.5</b>	155.342
<b>174.0</b>	151.367
<b>174.5</b>	146.902
<b>175.0</b>	142.169
<b>175.5</b>	136.924
<b>176.0</b>	131.369
<b>176.5</b>	125.087
<b>177.0</b>	118.036
<b>177.5</b>	110.644
<b>178.0</b>	102.033
<b>178.5</b>	92.654
<b>179.0</b>	83.231
<b>179.5</b>	74.610
<b>180.0</b>	67.442

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : FSN OPAL 14 BOWL.IES**

**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	82.60	N.A.	5.70
0-30	175.57	N.A.	12.10
0-40	288.30	N.A.	19.90
0-60	519.38	N.A.	35.80
0-80	685.90	N.A.	47.30
0-90	733.76	N.A.	50.60
10-90	712.40	N.A.	49.20
20-40	205.70	N.A.	14.20
20-50	324.62	N.A.	22.40
40-70	326.00	N.A.	22.50
60-80	166.52	N.A.	11.50
70-80	71.61	N.A.	4.90
80-90	47.86	N.A.	3.30
90-110	100.17	N.A.	6.90
90-120	193.01	N.A.	13.30
90-130	314.36	N.A.	21.70
90-150	559.17	N.A.	38.60
90-180	715.02	N.A.	49.40
110-180	614.85	N.A.	42.40
0-180	1448.78	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	21.36
10-20	61.24
20-30	92.97
30-40	112.73
40-50	118.92
50-60	112.16
60-70	94.92
70-80	71.61
80-90	47.86
90-100	37.34
100-110	62.83
110-120	92.84
120-130	121.35
130-140	130.02
140-150	114.78
150-160	87.25
160-170	54.01
170-180	14.59

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : FSN OPAL 14 BOWL.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	107	107	107	107	99	99	99	99	84	84	84	70	70	70	57	57	57	51
1	97	92	87	83	89	85	81	77	71	69	66	59	57	55	48	47	45	40
2	87	79	73	67	80	73	67	62	62	57	54	51	48	45	42	39	37	32
3	79	69	61	55	73	64	57	52	54	49	44	45	41	38	36	34	31	27
4	72	61	53	46	66	56	49	43	48	42	38	40	35	32	32	29	26	23
5	66	54	46	39	61	50	43	37	43	37	32	36	31	27	29	26	23	20
6	61	49	40	34	56	45	37	32	38	32	28	32	27	24	26	23	20	17
7	56	44	36	30	52	41	33	28	35	29	24	29	24	21	24	20	18	15
8	52	40	32	26	48	37	30	25	32	26	22	27	22	19	22	18	16	13
9	49	36	28	23	45	34	27	22	29	23	19	24	20	17	20	17	14	12
10	45	33	26	21	42	31	24	20	27	21	17	23	18	15	19	15	13	11

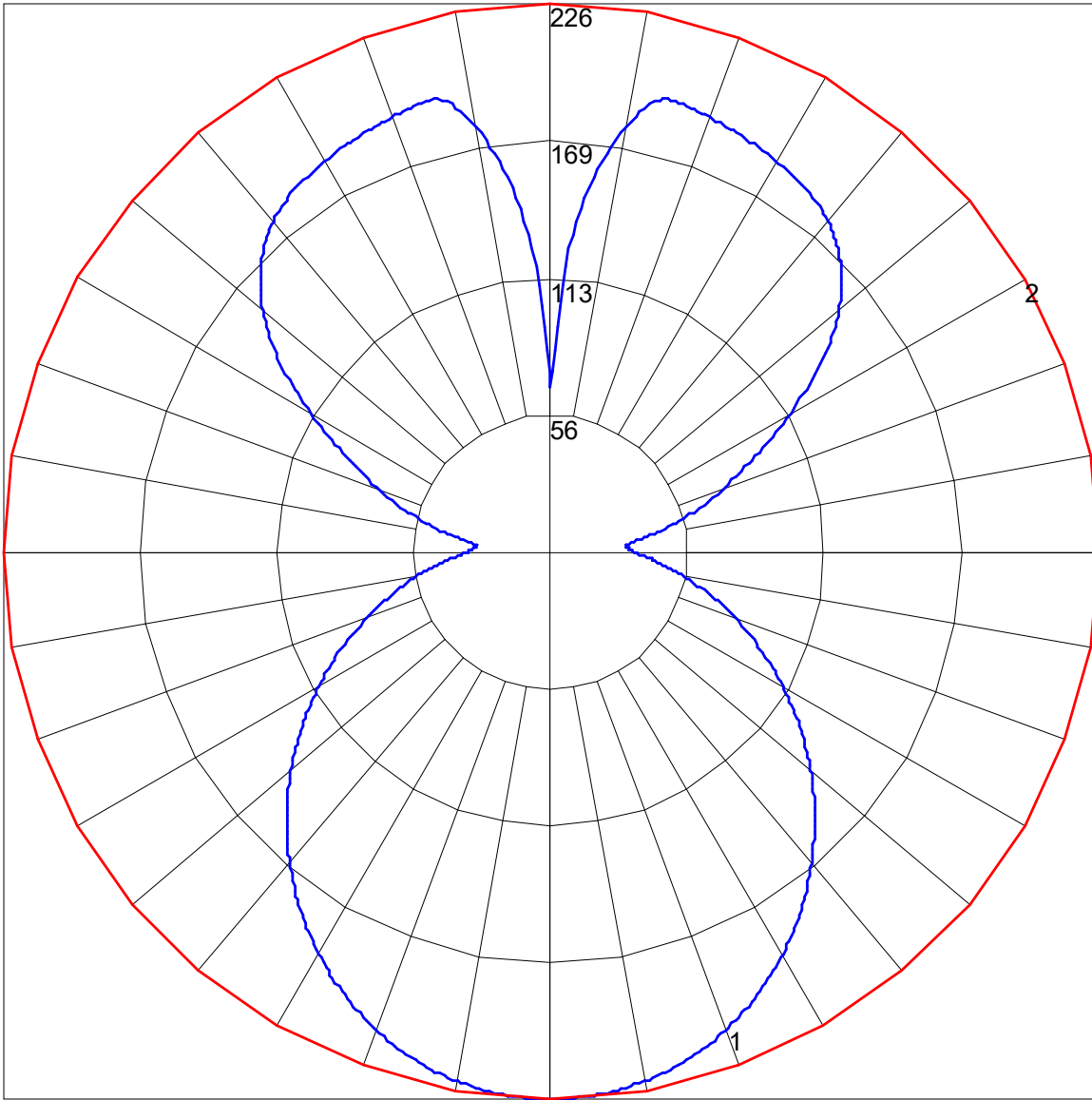
**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : FSN OPAL 14 BOWL.IES**

**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					UGR Viewed Endwise				
X=2H	Y=2H	8.7	9.6	9.6	10.5	11.8	8.7	9.6	9.6	10.5	11.8
	3H	10.6	11.5	11.6	12.4	13.7	10.6	11.5	11.6	12.4	13.7
	4H	11.5	12.3	12.5	13.3	14.5	11.5	12.3	12.5	13.3	14.5
	6H	12.3	13.0	13.2	14.0	15.3	12.3	13.0	13.2	14.0	15.3
	8H	12.6	13.3	13.6	14.3	15.6	12.6	13.3	13.6	14.3	15.6
	12H	12.9	13.6	13.9	14.6	15.9	12.9	13.6	13.9	14.6	15.9
4H	2H	9.2	10.0	10.2	11.0	12.3	9.2	10.0	10.2	11.0	12.3
	3H	11.4	12.1	12.4	13.1	14.4	11.4	12.1	12.4	13.1	14.4
	4H	12.4	13.0	13.4	14.0	15.3	12.4	13.0	13.4	14.0	15.3
	6H	13.3	13.9	14.3	14.9	16.2	13.3	13.9	14.3	14.9	16.2
	8H	13.8	14.3	14.8	15.3	16.6	13.8	14.3	14.8	15.3	16.6
	12H	14.2	14.6	15.2	15.6	17.0	14.2	14.6	15.2	15.6	17.0
8H	4H	12.7	13.2	13.7	14.2	15.6	12.7	13.2	13.7	14.2	15.6
	6H	13.8	14.3	14.9	15.3	16.6	13.8	14.3	14.9	15.3	16.6
	8H	14.4	14.8	15.4	15.8	17.1	14.4	14.8	15.4	15.8	17.1
	12H	14.9	15.3	16.0	16.3	17.7	14.9	15.3	16.0	16.3	17.7
12H	4H	12.8	13.2	13.8	14.2	15.6	12.8	13.2	13.8	14.2	15.6
	6H	13.9	14.3	15.0	15.3	16.7	13.9	14.3	15.0	15.3	16.7
	8H	14.5	14.9	15.6	15.9	17.3	14.5	14.9	15.6	15.9	17.3

Maximum UGR = 17.7

POLAR GRAPH



Maximum Candela = 225.796 Located At Horizontal Angle = 0, Vertical Angle = 0  
# 1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.)