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**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : PNA 14 BOWL.IES**

**DESCRIPTION INFORMATION (From Photometric File)**

IESNA:LM-63-2002  
[TEST] LLI-18210-3  
[TESTLAB] LightLab International ([www.LightLabInternational.com](http://www.LightLabInternational.com))  
[MANUFAC] Justice Design Group, Los Angeles, CA 90071  
[LUMCAT] Porcelina (PNA) 14" Bowl  
[LUMINAIRE] Justice Design Group - Pendant mount luminaire. Product ID: PNA 14" Bowl  
[MORE] Extruded base plate with resin 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	1231
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	54
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

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

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	1362	1362	1362
55	1227	1227	1227
65	1085	1085	1085
75	944	944	944
85	826	826	826

**IES INDOOR REPORT**  
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**CANDELA TABULATION**

	<u>0</u>
0.0	191.915
0.5	191.906
1.0	191.888
1.5	191.842
2.0	191.779
2.5	191.688
3.0	191.606
3.5	191.497
4.0	191.361
4.5	191.234
5.0	191.070
5.5	190.907
6.0	190.689
6.5	190.489
7.0	190.253
7.5	190.008
8.0	189.745
8.5	189.463
9.0	189.164
9.5	188.864
10.0	188.537
10.5	188.219
11.0	187.865
11.5	187.475
12.0	187.093
12.5	186.694
13.0	186.267
13.5	185.831
14.0	185.386
14.5	184.914
15.0	184.433
15.5	183.934
16.0	183.398
16.5	182.862
17.0	182.317
17.5	181.754
18.0	181.155
18.5	180.583
19.0	179.947
19.5	179.321
20.0	178.685
20.5	178.022
21.0	177.351
21.5	176.651
22.0	175.952
22.5	175.226
23.0	174.509
23.5	173.746
24.0	172.974
24.5	172.211
25.0	171.439
25.5	170.622
26.0	169.796
26.5	168.988

**IES INDOOR REPORT**  
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**CANDELA TABULATION - (Cont.)**

<b>27.0</b>	168.125
<b>27.5</b>	167.299
<b>28.0</b>	166.427
<b>28.5</b>	165.547
<b>29.0</b>	164.666
<b>29.5</b>	163.767
<b>30.0</b>	162.859
<b>30.5</b>	161.915
<b>31.0</b>	160.988
<b>31.5</b>	160.026
<b>32.0</b>	159.100
<b>32.5</b>	158.119
<b>33.0</b>	157.129
<b>33.5</b>	156.149
<b>34.0</b>	155.150
<b>34.5</b>	154.133
<b>35.0</b>	153.098
<b>35.5</b>	152.072
<b>36.0</b>	151.037
<b>36.5</b>	149.993
<b>37.0</b>	148.939
<b>37.5</b>	147.868
<b>38.0</b>	146.805
<b>38.5</b>	145.707
<b>39.0</b>	144.626
<b>39.5</b>	143.528
<b>40.0</b>	142.411
<b>40.5</b>	141.285
<b>41.0</b>	140.195
<b>41.5</b>	139.042
<b>42.0</b>	137.889
<b>42.5</b>	136.754
<b>43.0</b>	135.601
<b>43.5</b>	134.448
<b>44.0</b>	133.267
<b>44.5</b>	132.105
<b>45.0</b>	130.934
<b>45.5</b>	129.771
<b>46.0</b>	128.600
<b>46.5</b>	127.392
<b>47.0</b>	126.203
<b>47.5</b>	124.986
<b>48.0</b>	123.806
<b>48.5</b>	122.571
<b>49.0</b>	121.372
<b>49.5</b>	120.137
<b>50.0</b>	118.975
<b>50.5</b>	117.731
<b>51.0</b>	116.487
<b>51.5</b>	115.271
<b>52.0</b>	114.008
<b>52.5</b>	112.792
<b>53.0</b>	111.530
<b>53.5</b>	110.295
<b>54.0</b>	109.033
<b>54.5</b>	107.816

**IES INDOOR REPORT**  
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**CANDELA TABULATION - (Cont.)**

<b>55.0</b>	106.554
<b>55.5</b>	105.301
<b>56.0</b>	104.048
<b>56.5</b>	102.777
<b>57.0</b>	101.514
<b>57.5</b>	100.252
<b>58.0</b>	98.990
<b>58.5</b>	97.719
<b>59.0</b>	96.511
<b>59.5</b>	95.231
<b>60.0</b>	93.960
<b>60.5</b>	92.716
<b>61.0</b>	91.436
<b>61.5</b>	90.164
<b>62.0</b>	88.893
<b>62.5</b>	87.649
<b>63.0</b>	86.369
<b>63.5</b>	85.152
<b>64.0</b>	83.881
<b>64.5</b>	82.637
<b>65.0</b>	81.393
<b>65.5</b>	80.122
<b>66.0</b>	78.905
<b>66.5</b>	77.670
<b>67.0</b>	76.426
<b>67.5</b>	75.191
<b>68.0</b>	74.002
<b>68.5</b>	72.767
<b>69.0</b>	71.559
<b>69.5</b>	70.361
<b>70.0</b>	69.144
<b>70.5</b>	67.955
<b>71.0</b>	66.747
<b>71.5</b>	65.558
<b>72.0</b>	64.368
<b>72.5</b>	63.233
<b>73.0</b>	62.044
<b>73.5</b>	60.900
<b>74.0</b>	59.755
<b>74.5</b>	58.593
<b>75.0</b>	57.485
<b>75.5</b>	56.350
<b>76.0</b>	55.234
<b>76.5</b>	54.117
<b>77.0</b>	53.045
<b>77.5</b>	51.947
<b>78.0</b>	50.857
<b>78.5</b>	49.804
<b>79.0</b>	48.741
<b>79.5</b>	47.697
<b>80.0</b>	46.662
<b>80.5</b>	45.645
<b>81.0</b>	44.628
<b>81.5</b>	43.648
<b>82.0</b>	42.649
<b>82.5</b>	41.686

**IES INDOOR REPORT  
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**CANDELA TABULATION - (Cont.)**

<b>83.0</b>	40.751
<b>83.5</b>	39.779
<b>84.0</b>	38.871
<b>84.5</b>	37.936
<b>85.0</b>	37.046
<b>85.5</b>	36.157
<b>86.0</b>	35.312
<b>86.5</b>	34.440
<b>87.0</b>	33.605
<b>87.5</b>	32.788
<b>88.0</b>	31.962
<b>88.5</b>	31.199
<b>89.0</b>	30.418
<b>89.5</b>	29.683
<b>90.0</b>	29.065
<b>90.5</b>	28.575
<b>91.0</b>	28.175
<b>91.5</b>	27.830
<b>92.0</b>	27.549
<b>92.5</b>	27.249
<b>93.0</b>	27.004
<b>93.5</b>	26.777
<b>94.0</b>	26.568
<b>94.5</b>	26.423
<b>95.0</b>	26.450
<b>95.5</b>	26.722
<b>96.0</b>	27.304
<b>96.5</b>	28.175
<b>97.0</b>	29.265
<b>97.5</b>	30.554
<b>98.0</b>	31.807
<b>98.5</b>	33.015
<b>99.0</b>	34.286
<b>99.5</b>	35.466
<b>100.0</b>	36.683
<b>100.5</b>	38.009
<b>101.0</b>	39.371
<b>101.5</b>	40.824
<b>102.0</b>	42.249
<b>102.5</b>	43.720
<b>103.0</b>	45.109
<b>103.5</b>	46.526
<b>104.0</b>	47.888
<b>104.5</b>	49.277
<b>105.0</b>	50.666
<b>105.5</b>	52.037
<b>106.0</b>	53.427
<b>106.5</b>	54.798
<b>107.0</b>	56.187
<b>107.5</b>	57.522
<b>108.0</b>	58.911
<b>108.5</b>	60.228
<b>109.0</b>	61.571
<b>109.5</b>	62.888
<b>110.0</b>	64.223
<b>110.5</b>	65.585

**IES INDOOR REPORT  
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**CANDELA TABULATION - (Cont.)**

<b>111.0</b>	66.983
<b>111.5</b>	68.418
<b>112.0</b>	69.834
<b>112.5</b>	71.342
<b>113.0</b>	72.803
<b>113.5</b>	74.356
<b>114.0</b>	75.963
<b>114.5</b>	77.580
<b>115.0</b>	79.241
<b>115.5</b>	80.903
<b>116.0</b>	82.610
<b>116.5</b>	84.317
<b>117.0</b>	86.124
<b>117.5</b>	87.867
<b>118.0</b>	89.665
<b>118.5</b>	91.517
<b>119.0</b>	93.370
<b>119.5</b>	95.231
<b>120.0</b>	97.083
<b>120.5</b>	98.981
<b>121.0</b>	100.852
<b>121.5</b>	102.767
<b>122.0</b>	104.629
<b>122.5</b>	106.545
<b>123.0</b>	108.433
<b>123.5</b>	110.277
<b>124.0</b>	112.147
<b>124.5</b>	113.990
<b>125.0</b>	115.815
<b>125.5</b>	117.586
<b>126.0</b>	119.338
<b>126.5</b>	121.000
<b>127.0</b>	122.662
<b>127.5</b>	124.305
<b>128.0</b>	125.894
<b>128.5</b>	127.420
<b>129.0</b>	128.954
<b>129.5</b>	130.425
<b>130.0</b>	131.851
<b>130.5</b>	133.231
<b>131.0</b>	134.529
<b>131.5</b>	135.855
<b>132.0</b>	137.117
<b>132.5</b>	138.307
<b>133.0</b>	139.478
<b>133.5</b>	140.586
<b>134.0</b>	141.675
<b>134.5</b>	142.710
<b>135.0</b>	143.682
<b>135.5</b>	144.626
<b>136.0</b>	145.516
<b>136.5</b>	146.397
<b>137.0</b>	147.214
<b>137.5</b>	147.995
<b>138.0</b>	148.739
<b>138.5</b>	149.475

**IES INDOOR REPORT  
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**CANDELA TABULATION - (Cont.)**

<b>139.0</b>	150.138
<b>139.5</b>	150.755
<b>140.0</b>	151.382
<b>140.5</b>	151.927
<b>141.0</b>	152.471
<b>141.5</b>	152.971
<b>142.0</b>	153.434
<b>142.5</b>	153.897
<b>143.0</b>	154.306
<b>143.5</b>	154.696
<b>144.0</b>	155.095
<b>144.5</b>	155.422
<b>145.0</b>	155.767
<b>145.5</b>	156.049
<b>146.0</b>	156.367
<b>146.5</b>	156.639
<b>147.0</b>	156.902
<b>147.5</b>	157.138
<b>148.0</b>	157.365
<b>148.5</b>	157.592
<b>149.0</b>	157.838
<b>149.5</b>	158.065
<b>150.0</b>	158.283
<b>150.5</b>	158.500
<b>151.0</b>	158.737
<b>151.5</b>	158.945
<b>152.0</b>	159.172
<b>152.5</b>	159.399
<b>153.0</b>	159.608
<b>153.5</b>	159.799
<b>154.0</b>	159.999
<b>154.5</b>	160.189
<b>155.0</b>	160.362
<b>155.5</b>	160.562
<b>156.0</b>	160.752
<b>156.5</b>	160.943
<b>157.0</b>	161.134
<b>157.5</b>	161.297
<b>158.0</b>	161.506
<b>158.5</b>	161.688
<b>159.0</b>	161.878
<b>159.5</b>	162.087
<b>160.0</b>	162.287
<b>160.5</b>	162.496
<b>161.0</b>	162.686
<b>161.5</b>	162.877
<b>162.0</b>	163.068
<b>162.5</b>	163.295
<b>163.0</b>	163.494
<b>163.5</b>	163.740
<b>164.0</b>	163.994
<b>164.5</b>	164.121
<b>165.0</b>	164.094
<b>165.5</b>	163.939
<b>166.0</b>	163.540
<b>166.5</b>	162.859



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**CANDELA TABULATION - (Cont.)**

<b>167.0</b>	161.996
<b>167.5</b>	160.743
<b>168.0</b>	159.254
<b>168.5</b>	157.629
<b>169.0</b>	155.686
<b>169.5</b>	153.570
<b>170.0</b>	151.273
<b>170.5</b>	148.812
<b>171.0</b>	146.170
<b>171.5</b>	143.546
<b>172.0</b>	140.776
<b>172.5</b>	137.971
<b>173.0</b>	135.129
<b>173.5</b>	132.032
<b>174.0</b>	128.655
<b>174.5</b>	124.859
<b>175.0</b>	120.837
<b>175.5</b>	116.378
<b>176.0</b>	111.657
<b>176.5</b>	106.318
<b>177.0</b>	100.325
<b>177.5</b>	94.042
<b>178.0</b>	86.723
<b>178.5</b>	78.751
<b>179.0</b>	70.742
<b>179.5</b>	63.415
<b>180.0</b>	57.322

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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	70.21	N.A.	5.70
0-30	149.22	N.A.	12.10
0-40	245.04	N.A.	19.90
0-60	441.45	N.A.	35.80
0-80	582.98	N.A.	47.30
0-90	623.66	N.A.	50.60
10-90	605.50	N.A.	49.20
20-40	174.83	N.A.	14.20
20-50	275.91	N.A.	22.40
40-70	277.08	N.A.	22.50
60-80	141.53	N.A.	11.50
70-80	60.86	N.A.	4.90
80-90	40.68	N.A.	3.30
90-110	85.14	N.A.	6.90
90-120	164.05	N.A.	13.30
90-130	267.19	N.A.	21.70
90-150	475.26	N.A.	38.60
90-180	607.73	N.A.	49.40
110-180	522.59	N.A.	42.40
0-180	1231.39	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	18.16
10-20	52.05
20-30	79.02
30-40	95.82
40-50	101.07
50-60	95.33
60-70	80.67
70-80	60.86
80-90	40.68
90-100	31.74
100-110	53.40
110-120	78.91
120-130	103.14
130-140	110.51
140-150	97.56
150-160	74.16
160-170	45.90
170-180	12.40

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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	107	107	107	107	99	99	99	99	84	84	84	70	70	70	57	57	57	51	0
1	97	92	87	83	89	85	81	77	71	69	66	59	57	55	48	47	45	40	0
2	87	79	73	67	80	73	67	62	62	57	54	51	48	45	42	39	37	32	0
3	79	69	62	55	73	64	57	52	54	49	45	45	41	38	36	34	31	27	0
4	73	61	53	46	66	57	49	43	48	42	38	40	35	32	32	29	26	23	0
5	66	54	46	40	61	50	43	37	43	37	32	36	31	27	29	26	23	20	0
6	61	49	40	34	56	45	38	32	38	32	28	32	27	24	26	23	20	17	0
7	56	44	36	30	52	41	33	28	35	29	24	29	24	21	24	20	18	15	0
8	52	40	32	26	48	37	30	25	32	26	22	27	22	19	22	18	16	13	0
9	49	36	28	23	45	34	27	22	29	23	19	24	20	17	20	17	14	12	0
10	45	33	26	21	42	31	24	20	27	21	17	23	18	15	19	15	13	11	0

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**UGR TABLE - CORRECTED**

Reflectances

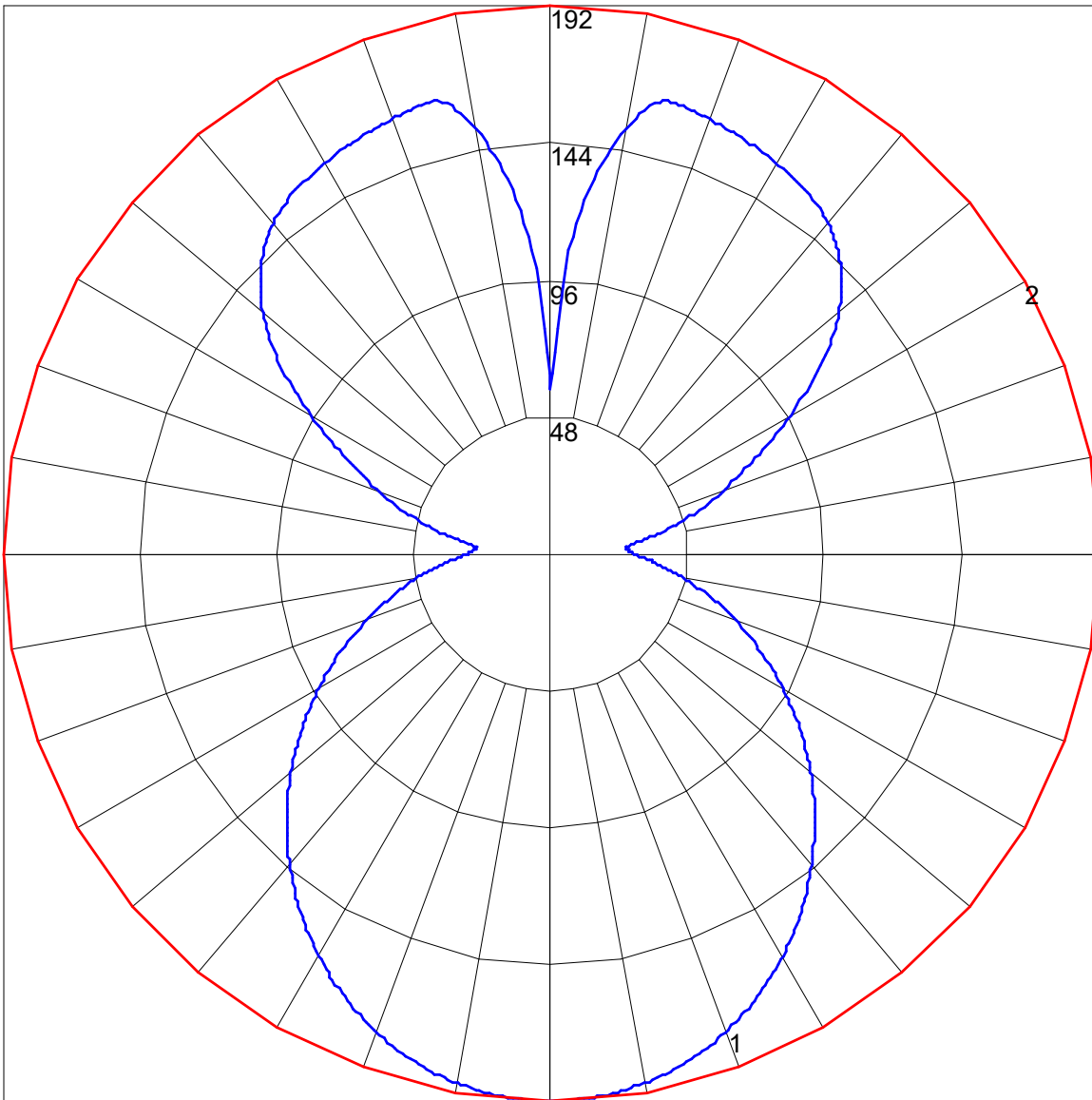
Ceiling Cavity	70	70	50	50	30	70	70	50	50	30
Walls	50	30	50	30	30	50	30	50	30	30
Floor Cavity	20	20	20	20	20	20	20	20	20	20

Room Size

Room Size		UGR Viewed Crosswise					UGR Viewed Endwise				
X=2H	Y=2H	8.0	9.0	9.0	9.9	11.2	8.0	9.0	9.0	9.9	11.2
	3H	10.0	10.9	11.0	11.8	13.1	10.0	10.9	11.0	11.8	13.1
	4H	10.9	11.7	11.9	12.6	13.9	10.9	11.7	11.9	12.6	13.9
	6H	11.7	12.4	12.6	13.4	14.7	11.7	12.4	12.6	13.4	14.7
	8H	12.0	12.7	13.0	13.7	15.0	12.0	12.7	13.0	13.7	15.0
	12H	12.3	13.0	13.3	14.0	15.3	12.3	13.0	13.3	14.0	15.3
4H	2H	8.6	9.4	9.6	10.4	11.7	8.6	9.4	9.6	10.4	11.7
	3H	10.8	11.5	11.8	12.5	13.8	10.8	11.5	11.8	12.5	13.8
	4H	11.8	12.4	12.8	13.4	14.7	11.8	12.4	12.8	13.4	14.7
	6H	12.7	13.3	13.7	14.3	15.6	12.7	13.3	13.7	14.3	15.6
	8H	13.2	13.7	14.2	14.7	16.0	13.2	13.7	14.2	14.7	16.0
	12H	13.6	14.0	14.6	15.0	16.4	13.6	14.0	14.6	15.0	16.4
8H	4H	12.1	12.6	13.1	13.6	15.0	12.1	12.6	13.1	13.6	15.0
	6H	13.2	13.7	14.2	14.7	16.0	13.2	13.7	14.2	14.7	16.0
	8H	13.8	14.2	14.8	15.2	16.5	13.8	14.2	14.8	15.2	16.5
	12H	14.3	14.7	15.3	15.7	17.1	14.3	14.7	15.3	15.7	17.1
12H	4H	12.2	12.6	13.2	13.6	15.0	12.2	12.6	13.2	13.6	15.0
	6H	13.3	13.7	14.4	14.7	16.1	13.3	13.7	14.4	14.7	16.1
	8H	13.9	14.3	15.0	15.3	16.7	13.9	14.3	15.0	15.3	16.7

Maximum UGR = 17.1

POLAR GRAPH



Maximum Candela = 191.915 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.)