



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : WAVE2-LED4-SO-04-WA-D9.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002  
 [TEST] L101404401  
 [TESTLAB] LIGHT LABORATORY, INC.  
 [ISSUEDATE] 10/21/2014  
 [MANUFAC] PRUDENTIAL LTG.  
 [LUMCAT] Wave2-LED4-SO-04-WA-D9-SC-UN  
 [LUMINAIRE] 48"L. X 10"W. X 2-1/2"H. LED LUMINAIRE  
 [MORE] DIFFUSED LENS  
 [BALLASTCAT] OSRAM OPTOTRONIC  
 [BALLAST] INPUT: 120-277VAC  
 [LAMPPOSITION] 0,0  
 [LAMPCAT] N/A  
 [OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND  
 [MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.  
 [ INPUT] 120VAC  
 [ TEST PROCEDURE] IESNA:LM-79-08

### CHARACTERISTICS

|                                 |                     |
|---------------------------------|---------------------|
| Lumens Per Lamp                 | N.A. (absolute)     |
| Total Lamp Lumens               | N.A. (absolute)     |
| Luminaire Lumens                | 2878                |
| Total Luminaire Efficiency      | N.A.                |
| Luminaire Efficacy Rating (LER) | 99                  |
| Total Luminaire Watts           | 29                  |
| Ballast Factor                  | 1.00                |
| CIE Type                        | Semi-Direct         |
| Spacing Criterion (0-180)       | 1.22                |
| Spacing Criterion (90-270)      | 1.20                |
| Spacing Criterion (Diagonal)    | 1.32                |
| Basic Luminous Shape            | Rectangular w/Sides |
| Luminous Length (0-180)         | 4.00 ft             |
| Luminous Width (90-270)         | 0.54 ft             |
| Luminous Height                 | 0.21 ft             |

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : WAVE2-LED4-SO-04-WA-D9.IES**

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

| Angle In<br>Degrees | Average<br>0-Deg | Average<br>45-Deg | Average<br>90-Deg |
|---------------------|------------------|-------------------|-------------------|
| 45                  | 3798             | 2969              | 2743              |
| 55                  | 3509             | 2526              | 2281              |
| 65                  | 3157             | 2024              | 1781              |
| 75                  | 2477             | 1311              | 1113              |
| 85                  | 1405             | 452               | 339               |

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : WAVE2-LED4-SO-04-WA-D9.IES**

**CANDELA TABULATION**

|            | <u>0</u> | <u>5</u> | <u>10</u> | <u>15</u> | <u>20</u> | <u>25</u> | <u>30</u> | <u>35</u> | <u>40</u> | <u>45</u> |
|------------|----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| <b>0</b>   | 916.276  | 916.276  | 916.276   | 916.276   | 916.276   | 916.276   | 916.276   | 916.276   | 916.276   | 916.276   |
| <b>5</b>   | 908.913  | 908.966  | 908.948   | 908.806   | 909.143   | 909.992   | 910.771   | 911.196   | 911.444   | 911.426   |
| <b>10</b>  | 893.124  | 893.142  | 893.071   | 892.823   | 892.965   | 893.638   | 894.257   | 894.558   | 894.646   | 894.469   |
| <b>15</b>  | 867.689  | 867.636  | 867.388   | 867.123   | 867.141   | 867.495   | 867.866   | 867.919   | 867.725   | 867.335   |
| <b>20</b>  | 833.511  | 833.404  | 833.086   | 832.696   | 832.555   | 832.679   | 832.679   | 832.590   | 832.307   | 831.741   |
| <b>25</b>  | 791.756  | 791.579  | 791.137   | 790.659   | 790.376   | 790.340   | 790.340   | 790.128   | 789.190   | 787.738   |
| <b>30</b>  | 743.028  | 742.957  | 742.444   | 741.895   | 741.595   | 741.701   | 741.152   | 740.055   | 738.515   | 736.603   |
| <b>35</b>  | 689.203  | 689.061  | 688.371   | 687.680   | 687.486   | 686.955   | 685.822   | 684.370   | 682.370   | 679.999   |
| <b>40</b>  | 630.421  | 630.208  | 629.430   | 628.739   | 628.403   | 627.323   | 626.049   | 624.155   | 621.500   | 618.456   |
| <b>45</b>  | 567.763  | 567.462  | 566.559   | 566.223   | 565.214   | 564.099   | 562.453   | 559.851   | 556.382   | 553.249   |
| <b>50</b>  | 501.954  | 501.583  | 500.945   | 500.290   | 499.193   | 497.724   | 495.211   | 491.918   | 489.210   | 486.838   |
| <b>55</b>  | 434.570  | 434.305  | 434.092   | 433.101   | 431.827   | 429.685   | 426.906   | 424.765   | 422.853   | 420.782   |
| <b>60</b>  | 370.673  | 370.603  | 370.355   | 369.293   | 367.594   | 364.620   | 363.487   | 362.018   | 360.018   | 357.805   |
| <b>65</b>  | 298.139  | 298.015  | 297.608   | 296.510   | 294.493   | 293.678   | 292.422   | 290.510   | 288.581   | 286.811   |
| <b>70</b>  | 224.878  | 224.985  | 224.401   | 222.914   | 222.436   | 221.445   | 220.011   | 218.613   | 217.179   | 215.798   |
| <b>75</b>  | 153.972  | 153.955  | 153.070   | 152.786   | 152.008   | 151.229   | 150.397   | 149.530   | 148.538   | 147.565   |
| <b>80</b>  | 89.615   | 89.438   | 89.314    | 89.102    | 88.854    | 88.482    | 88.075    | 87.650    | 87.226    | 86.730    |
| <b>85</b>  | 39.365   | 39.453   | 39.400    | 39.347    | 39.188    | 38.905    | 38.409    | 37.701    | 37.011    | 36.161    |
| <b>90</b>  | 0.000    | 0.000    | 0.000     | 0.000     | 0.000     | 0.000     | 0.000     | 0.000     | 0.000     | 0.000     |
| <b>95</b>  | 15.116   | 15.222   | 17.275    | 18.337    | 18.196    | 17.594    | 16.921    | 16.549    | 16.142    | 15.771    |
| <b>100</b> | 25.276   | 24.214   | 24.691    | 27.877    | 31.400    | 33.453    | 33.984    | 33.595    | 32.639    | 31.524    |
| <b>105</b> | 37.400   | 36.391   | 34.356    | 36.126    | 38.851    | 43.613    | 46.162    | 48.781    | 50.038    | 50.533    |
| <b>110</b> | 48.162   | 47.401   | 45.241    | 44.993    | 47.029    | 49.808    | 53.029    | 56.551    | 59.844    | 62.676    |
| <b>115</b> | 60.481   | 59.861   | 57.613    | 56.180    | 56.746    | 58.552    | 61.030    | 63.631    | 66.499    | 69.561    |
| <b>120</b> | 72.145   | 71.703   | 69.826    | 68.039    | 67.348    | 68.198    | 69.685    | 71.756    | 74.039    | 76.145    |
| <b>125</b> | 82.110   | 81.650   | 80.376    | 78.305    | 77.225    | 77.154    | 78.057    | 79.384    | 81.031    | 82.871    |
| <b>130</b> | 92.766   | 92.412   | 91.084    | 89.491    | 88.181    | 87.473    | 87.597    | 88.447    | 89.420    | 90.447    |
| <b>135</b> | 102.412  | 102.324  | 101.067   | 99.970    | 98.536    | 97.934    | 97.297    | 97.261    | 97.863    | 98.500    |
| <b>140</b> | 111.138  | 111.351  | 110.253   | 109.244   | 108.359   | 107.474   | 106.996   | 106.306   | 106.253   | 106.501   |
| <b>145</b> | 119.351  | 119.599  | 118.944   | 117.882   | 117.085   | 116.324   | 115.846   | 115.245   | 114.749   | 114.307   |
| <b>150</b> | 126.590  | 126.856  | 126.608   | 125.599   | 124.909   | 124.431   | 123.988   | 123.422   | 122.873   | 122.449   |
| <b>155</b> | 132.856  | 133.122  | 133.210   | 132.484   | 131.759   | 131.316   | 130.945   | 130.768   | 129.989   | 129.812   |
| <b>160</b> | 138.290  | 138.485  | 138.750   | 138.414   | 137.706   | 137.140   | 136.839   | 136.361   | 136.184   | 136.148   |
| <b>165</b> | 142.503  | 142.662  | 142.981   | 142.963   | 142.733   | 142.255   | 141.830   | 141.423   | 141.157   | 140.963   |
| <b>170</b> | 145.565  | 145.689  | 145.848   | 146.007   | 146.131   | 146.202   | 146.078   | 145.813   | 145.423   | 145.158   |
| <b>175</b> | 147.441  | 147.565  | 147.653   | 147.689   | 147.866   | 148.114   | 148.344   | 148.468   | 148.468   | 148.556   |
| <b>180</b> | 148.680  | 148.680  | 148.680   | 148.680   | 148.680   | 148.680   | 148.680   | 148.680   | 148.680   | 148.680   |

**Vert.  
Angles**

**Horizontal Angles**

|           | <u>50</u> | <u>55</u> | <u>60</u> | <u>65</u> | <u>70</u> | <u>75</u> | <u>80</u> | <u>85</u> | <u>90</u> |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| <b>0</b>  | 916.276   | 916.276   | 916.276   | 916.276   | 916.276   | 916.276   | 916.276   | 916.276   | 916.276   |
| <b>5</b>  | 911.302   | 911.107   | 910.860   | 910.276   | 909.798   | 909.479   | 909.444   | 909.391   | 909.214   |
| <b>10</b> | 894.115   | 893.744   | 893.248   | 892.522   | 891.956   | 891.567   | 891.390   | 891.354   | 891.160   |
| <b>15</b> | 866.769   | 866.185   | 865.512   | 864.716   | 864.132   | 863.636   | 863.317   | 863.371   | 863.087   |
| <b>20</b> | 830.873   | 829.670   | 828.484   | 827.209   | 826.201   | 825.439   | 824.855   | 824.749   | 824.484   |
| <b>25</b> | 786.252   | 784.659   | 783.119   | 781.561   | 780.446   | 779.419   | 778.676   | 778.481   | 778.163   |
| <b>30</b> | 734.762   | 732.798   | 730.815   | 728.957   | 727.647   | 726.302   | 725.187   | 724.903   | 724.603   |
| <b>35</b> | 677.698   | 675.220   | 672.529   | 670.281   | 668.423   | 666.865   | 665.839   | 665.343   | 665.201   |
| <b>40</b> | 615.340   | 612.491   | 610.013   | 608.296   | 606.738   | 605.393   | 604.614   | 603.942   | 604.101   |
| <b>45</b> | 550.718   | 548.399   | 546.452   | 544.948   | 543.532   | 542.151   | 541.443   | 540.877   | 541.071   |
| <b>50</b> | 484.750   | 482.714   | 480.856   | 479.121   | 477.404   | 476.095   | 475.227   | 474.802   | 474.856   |
| <b>55</b> | 418.658   | 416.552   | 414.569   | 412.711   | 410.976   | 409.790   | 409.153   | 408.675   | 408.781   |
| <b>60</b> | 355.664   | 353.770   | 351.929   | 350.248   | 348.832   | 347.716   | 347.327   | 346.743   | 346.831   |

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : WAVE2-LED4-SO-04-WA-D9.IES**

**CANDELA TABULATION - (Cont.)**

|            |         |         |         |         |         |         |         |         |         |
|------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| <b>65</b>  | 285.076 | 283.377 | 281.837 | 280.439 | 279.235 | 278.403 | 277.925 | 277.394 | 277.324 |
| <b>70</b>  | 214.453 | 213.073 | 211.834 | 210.754 | 209.922 | 209.285 | 208.665 | 208.205 | 208.046 |
| <b>75</b>  | 146.556 | 145.565 | 144.768 | 144.131 | 143.476 | 142.804 | 142.414 | 141.989 | 141.777 |
| <b>80</b>  | 86.217  | 85.686  | 85.102  | 84.624  | 84.181  | 83.739  | 83.314  | 82.978  | 82.854  |
| <b>85</b>  | 35.311  | 34.462  | 33.754  | 33.276  | 32.887  | 32.639  | 32.479  | 32.391  | 32.356  |
| <b>90</b>  | 0.000   | 0.000   | 0.000   | 0.000   | 0.000   | 0.000   | 0.000   | 0.000   | 0.000   |
| <b>95</b>  | 15.434  | 15.098  | 14.726  | 14.195  | 13.576  | 13.434  | 13.346  | 13.346  | 13.275  |
| <b>100</b> | 30.338  | 29.046  | 27.736  | 26.550  | 25.293  | 24.373  | 23.860  | 23.417  | 23.187  |
| <b>105</b> | 50.657  | 50.445  | 49.914  | 49.348  | 48.781  | 48.197  | 47.772  | 47.418  | 47.347  |
| <b>110</b> | 65.012  | 66.534  | 67.189  | 67.490  | 67.649  | 67.826  | 67.986  | 67.915  | 67.879  |
| <b>115</b> | 72.375  | 74.924  | 76.836  | 78.376  | 79.491  | 80.517  | 81.172  | 81.562  | 81.579  |
| <b>120</b> | 78.287  | 80.606  | 82.641  | 84.128  | 85.491  | 86.641  | 87.243  | 87.827  | 87.916  |
| <b>125</b> | 84.588  | 86.093  | 87.420  | 88.624  | 89.721  | 90.695  | 91.226  | 91.792  | 91.792  |
| <b>130</b> | 91.615  | 92.801  | 93.881  | 94.960  | 95.739  | 96.306  | 96.642  | 96.854  | 96.801  |
| <b>135</b> | 99.226  | 100.005 | 100.731 | 101.474 | 102.058 | 102.430 | 102.731 | 102.802 | 102.766 |
| <b>140</b> | 106.873 | 107.457 | 108.005 | 108.536 | 108.979 | 109.067 | 109.067 | 108.997 | 108.979 |
| <b>145</b> | 114.430 | 114.714 | 115.032 | 115.333 | 115.546 | 115.546 | 115.457 | 115.227 | 115.245 |
| <b>150</b> | 122.130 | 122.059 | 122.006 | 121.971 | 121.971 | 121.829 | 121.546 | 121.156 | 121.121 |
| <b>155</b> | 129.652 | 129.352 | 129.033 | 128.767 | 128.608 | 128.219 | 127.759 | 127.334 | 127.387 |
| <b>160</b> | 135.971 | 135.370 | 135.175 | 135.016 | 134.785 | 134.520 | 134.325 | 133.900 | 134.077 |
| <b>165</b> | 140.697 | 140.503 | 140.343 | 140.290 | 140.237 | 140.060 | 139.883 | 139.688 | 139.795 |
| <b>170</b> | 144.928 | 144.680 | 144.397 | 144.290 | 144.220 | 144.096 | 143.919 | 143.901 | 143.919 |
| <b>175</b> | 148.521 | 148.414 | 148.273 | 148.202 | 148.131 | 148.078 | 147.990 | 148.025 | 147.937 |
| <b>180</b> | 148.680 | 148.680 | 148.680 | 148.680 | 148.680 | 148.680 | 148.680 | 148.680 | 148.680 |

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : WAVE2-LED4-SO-04-WA-D9.IES**

**ZONAL LUMEN SUMMARY**

| Zone    | Lumens  | %Lamp | %Fixt  |
|---------|---------|-------|--------|
| 0-20    | 330.48  | N.A.  | 11.50  |
| 0-30    | 692.48  | N.A.  | 24.10  |
| 0-40    | 1116.88 | N.A.  | 38.80  |
| 0-60    | 1922.22 | N.A.  | 66.80  |
| 0-80    | 2364.33 | N.A.  | 82.10  |
| 0-90    | 2407.49 | N.A.  | 83.60  |
| 10-90   | 2321.15 | N.A.  | 80.60  |
| 20-40   | 786.40  | N.A.  | 27.30  |
| 20-50   | 1213.93 | N.A.  | 42.20  |
| 40-70   | 1089.68 | N.A.  | 37.90  |
| 60-80   | 442.11  | N.A.  | 15.40  |
| 70-80   | 157.77  | N.A.  | 5.50   |
| 80-90   | 43.16   | N.A.  | 1.50   |
| 90-110  | 63.21   | N.A.  | 2.20   |
| 90-120  | 131.27  | N.A.  | 4.60   |
| 90-130  | 206.86  | N.A.  | 7.20   |
| 90-150  | 357.03  | N.A.  | 12.40  |
| 90-180  | 470.91  | N.A.  | 16.40  |
| 110-180 | 407.71  | N.A.  | 14.20  |
| 0-180   | 2878.41 | N.A.  | 100.00 |

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

| Zone    | Lumens |
|---------|--------|
| 0-10    | 86.34  |
| 10-20   | 244.14 |
| 20-30   | 362.00 |
| 30-40   | 424.40 |
| 40-50   | 427.53 |
| 50-60   | 377.80 |
| 60-70   | 284.35 |
| 70-80   | 157.77 |
| 80-90   | 43.16  |
| 90-100  | 16.14  |
| 100-110 | 47.07  |
| 110-120 | 68.06  |
| 120-130 | 75.58  |
| 130-140 | 77.50  |
| 140-150 | 72.68  |
| 150-160 | 60.00  |
| 160-170 | 39.84  |
| 170-180 | 14.04  |

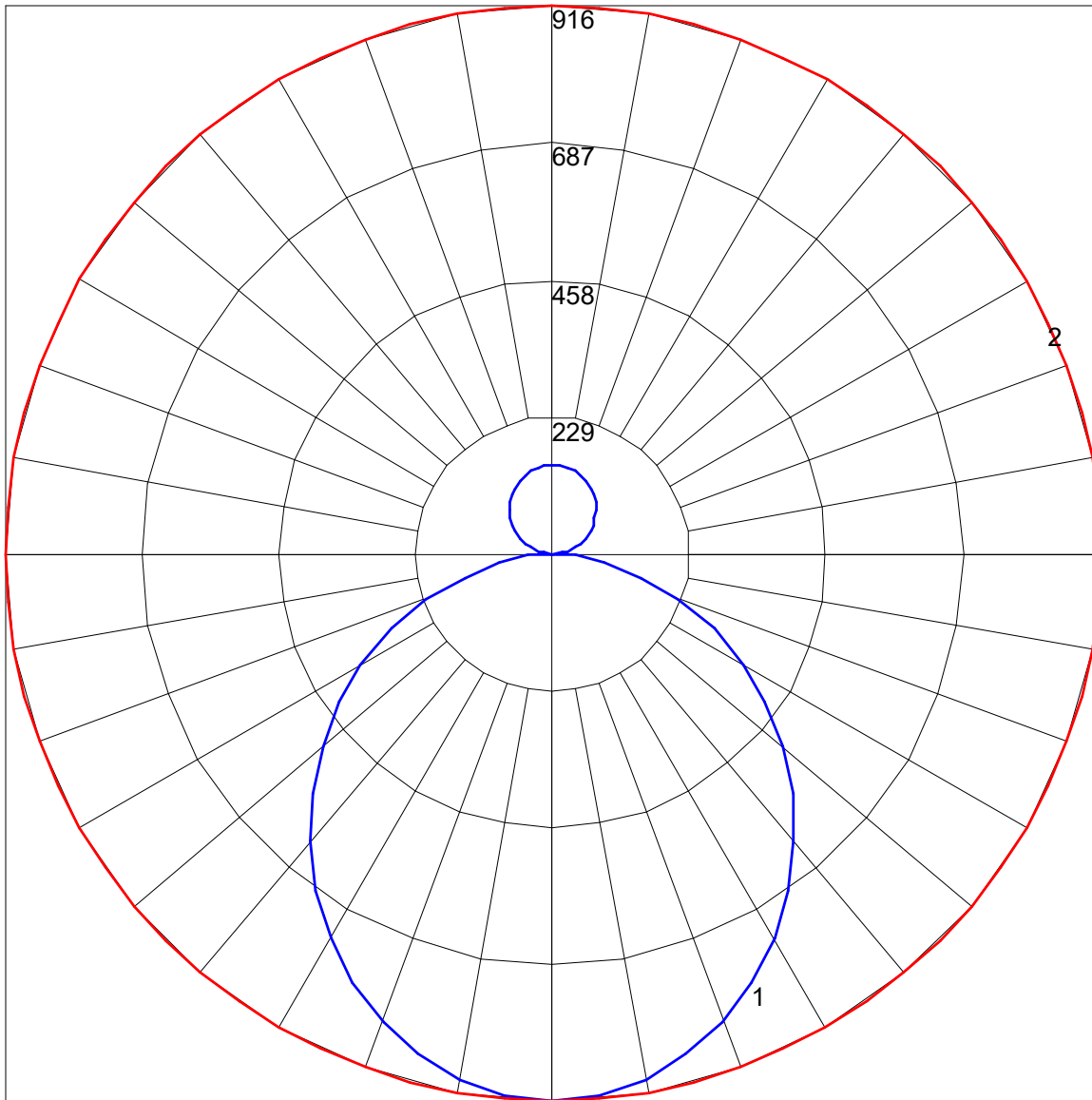
**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : WAVE2-LED4-SO-04-WA-D9.IES**

**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  | 115 | 115 | 115 | 115 | 111 | 111 | 111 | 111 | 102 | 102 | 102 | 94 | 94 | 94 | 87 | 87 | 87 | 84 |
| 1  | 105 | 101 | 97  | 93  | 101 | 97  | 93  | 90  | 90  | 87  | 84  | 83 | 81 | 79 | 77 | 75 | 73 | 70 |
| 2  | 96  | 88  | 81  | 76  | 92  | 85  | 79  | 74  | 78  | 74  | 70  | 73 | 69 | 66 | 68 | 65 | 62 | 59 |
| 3  | 87  | 77  | 69  | 63  | 84  | 75  | 67  | 62  | 69  | 63  | 58  | 64 | 60 | 55 | 60 | 56 | 53 | 50 |
| 4  | 80  | 69  | 60  | 54  | 77  | 66  | 58  | 52  | 62  | 55  | 50  | 57 | 52 | 48 | 53 | 49 | 45 | 43 |
| 5  | 74  | 61  | 53  | 46  | 70  | 59  | 51  | 45  | 55  | 48  | 43  | 52 | 46 | 41 | 48 | 43 | 39 | 37 |
| 6  | 68  | 55  | 46  | 40  | 65  | 53  | 45  | 39  | 50  | 43  | 38  | 47 | 41 | 36 | 44 | 39 | 35 | 32 |
| 7  | 63  | 50  | 41  | 36  | 60  | 48  | 40  | 35  | 45  | 39  | 34  | 43 | 37 | 32 | 40 | 35 | 31 | 29 |
| 8  | 59  | 46  | 37  | 32  | 56  | 44  | 36  | 31  | 42  | 35  | 30  | 39 | 33 | 29 | 37 | 32 | 28 | 26 |
| 9  | 55  | 42  | 34  | 28  | 53  | 41  | 33  | 28  | 38  | 32  | 27  | 36 | 30 | 26 | 34 | 29 | 25 | 23 |
| 10 | 51  | 39  | 31  | 26  | 49  | 37  | 30  | 25  | 35  | 29  | 24  | 33 | 28 | 24 | 31 | 26 | 23 | 21 |

POLAR GRAPH



Maximum Candela = 916.276 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.)