



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : O-20-LED4-LO-D9.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002  
 [TEST] L041502002  
 [TESTLAB] LIGHT LABORATORY, INC.  
 [ISSUE DATE] 4/15/2015  
 [MANUFAC] PRUDENTIAL LTG.  
 [LUMCAT] O-20-LED4-LO-D9  
 [LUMINAIRE] 24"DIA. X 5"H. LED FIXTURE  
 [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.  
 [TEST PROCEDURE] IESNA:LM-79-08

### CHARACTERISTICS

|                                 |                    |
|---------------------------------|--------------------|
| Lumens Per Lamp                 | N.A. (absolute)    |
| Total Lamp Lumens               | N.A. (absolute)    |
| Luminaire Lumens                | 1872               |
| Total Luminaire Efficiency      | N.A.               |
| Luminaire Efficacy Rating (LER) | 59                 |
| Total Luminaire Watts           | 32                 |
| Ballast Factor                  | 1.00               |
| CIE Type                        | Semi-Direct        |
| Spacing Criterion (0-180)       | 1.22               |
| Spacing Criterion (90-270)      | 1.24               |
| Spacing Criterion (Diagonal)    | 1.34               |
| Basic Luminous Shape            | Circular w/ Sides  |
| Luminous Length (0-180)         | 3.00 ft (Diameter) |
| Luminous Width (90-270)         | 3.00 ft (Diameter) |
| Luminous Height                 | 0.42 ft            |

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

| Angle In<br>Degrees | Average<br>0-Deg | Average<br>45-Deg | Average<br>90-Deg |
|---------------------|------------------|-------------------|-------------------|
| 45                  | 560              | 561               | 561               |
| 55                  | 498              | 498               | 499               |
| 65                  | 429              | 428               | 428               |
| 75                  | 316              | 315               | 315               |
| 85                  | 132              | 131               | 128               |

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**CANDELA TABULATION**

|            | <b>0</b> | <b>5</b> | <b>10</b> | <b>15</b> | <b>20</b> | <b>25</b> | <b>30</b> | <b>35</b> | <b>40</b> | <b>45</b> |
|------------|----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| <b>0</b>   | 486.673  | 486.673  | 486.673   | 486.673   | 486.673   | 486.673   | 486.673   | 486.673   | 486.673   | 486.673   |
| <b>5</b>   | 484.026  | 483.995  | 483.969   | 483.928   | 483.896   | 483.844   | 483.834   | 483.829   | 483.855   | 483.876   |
| <b>10</b>  | 476.159  | 476.148  | 476.122   | 476.128   | 476.164   | 476.159   | 476.148   | 476.138   | 476.190   | 476.221   |
| <b>15</b>  | 463.242  | 463.268  | 463.289   | 463.325   | 463.336   | 463.325   | 463.325   | 463.377   | 463.445   | 463.486   |
| <b>20</b>  | 445.978  | 445.983  | 445.983   | 446.035   | 446.082   | 446.087   | 446.108   | 446.207   | 446.306   | 446.368   |
| <b>25</b>  | 424.169  | 424.211  | 424.216   | 424.263   | 424.367   | 424.408   | 424.481   | 424.554   | 424.627   | 424.694   |
| <b>30</b>  | 398.850  | 398.856  | 398.882   | 398.949   | 399.048   | 399.110   | 399.168   | 399.261   | 399.339   | 399.391   |
| <b>35</b>  | 370.583  | 370.604  | 370.609   | 370.656   | 370.713   | 370.822   | 370.906   | 370.989   | 371.051   | 371.134   |
| <b>40</b>  | 339.581  | 339.633  | 339.607   | 339.654   | 339.716   | 339.846   | 339.981   | 340.122   | 340.252   | 340.314   |
| <b>45</b>  | 306.566  | 306.550  | 306.488   | 306.504   | 306.550   | 306.576   | 306.582   | 306.675   | 306.935   | 307.076   |
| <b>50</b>  | 271.627  | 271.617  | 271.549   | 271.497   | 271.502   | 271.502   | 271.528   | 271.580   | 271.632   | 271.705   |
| <b>55</b>  | 235.581  | 235.560  | 235.477   | 235.440   | 235.394   | 235.352   | 235.362   | 235.414   | 235.451   | 235.498   |
| <b>60</b>  | 202.649  | 202.675  | 202.613   | 202.576   | 202.524   | 202.358   | 202.270   | 202.290   | 202.311   | 202.342   |
| <b>65</b>  | 164.616  | 164.632  | 164.694   | 164.544   | 164.575   | 164.492   | 164.492   | 164.497   | 164.445   | 164.403   |
| <b>70</b>  | 126.490  | 126.417  | 126.422   | 126.365   | 126.360   | 126.329   | 126.318   | 126.324   | 126.287   | 126.277   |
| <b>75</b>  | 89.513   | 89.430   | 89.471    | 89.445    | 89.440    | 89.409    | 89.383    | 89.393    | 89.378    | 89.362    |
| <b>80</b>  | 54.496   | 54.491   | 54.454    | 54.439    | 54.439    | 54.428    | 54.392    | 54.345    | 54.298    | 54.246    |
| <b>85</b>  | 22.994   | 22.994   | 22.974    | 22.963    | 22.948    | 22.901    | 22.854    | 22.818    | 22.776    | 22.714    |
| <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>  | 11.518   | 11.492   | 11.414    | 11.274    | 11.112    | 10.920    | 10.738    | 10.572    | 10.426    | 10.312    |
| <b>100</b> | 20.322   | 20.275   | 20.228    | 20.254    | 20.207    | 20.145    | 20.072    | 19.978    | 19.926    | 19.828    |
| <b>105</b> | 31.777   | 31.814   | 31.996    | 32.089    | 32.141    | 32.188    | 32.146    | 32.136    | 31.990    | 31.892    |
| <b>110</b> | 44.897   | 44.855   | 45.011    | 45.100    | 45.084    | 45.063    | 44.990    | 44.975    | 45.027    | 45.027    |
| <b>115</b> | 59.093   | 59.036   | 59.119    | 59.067    | 59.270    | 59.363    | 59.223    | 59.181    | 59.062    | 58.921    |
| <b>120</b> | 73.341   | 73.429   | 73.507    | 73.731    | 73.814    | 73.632    | 73.393    | 73.356    | 73.403    | 73.304    |
| <b>125</b> | 86.772   | 86.923   | 86.663    | 86.627    | 86.986    | 87.136    | 87.313    | 87.547    | 87.552    | 87.599    |
| <b>130</b> | 102.071  | 102.170  | 102.086   | 102.232   | 102.768   | 103.267   | 103.475   | 103.652   | 103.865   | 103.958   |
| <b>135</b> | 118.742  | 118.711  | 118.654   | 118.851   | 119.496   | 119.865   | 120.167   | 120.557   | 121.165   | 121.482   |
| <b>140</b> | 134.654  | 134.690  | 134.784   | 134.820   | 135.637   | 136.724   | 137.654   | 138.289   | 138.648   | 138.674   |
| <b>145</b> | 152.152  | 152.079  | 152.105   | 152.334   | 152.906   | 153.520   | 154.092   | 154.710   | 154.991   | 155.241   |
| <b>150</b> | 168.740  | 168.345  | 168.444   | 168.672   | 168.880   | 169.265   | 169.879   | 170.030   | 170.357   | 170.472   |
| <b>155</b> | 183.087  | 183.050  | 183.373   | 182.988   | 183.118   | 183.565   | 184.101   | 184.267   | 184.590   | 184.605   |
| <b>160</b> | 196.212  | 196.191  | 195.546   | 195.702   | 195.822   | 196.102   | 196.659   | 196.820   | 196.841   | 196.914   |
| <b>165</b> | 206.513  | 206.835  | 206.440   | 206.029   | 206.305   | 206.476   | 206.658   | 207.054   | 207.121   | 206.996   |
| <b>170</b> | 214.141  | 214.224  | 214.110   | 213.777   | 213.871   | 214.204   | 214.370   | 214.802   | 214.781   | 214.552   |
| <b>175</b> | 218.197  | 218.088  | 218.067   | 218.296   | 218.504   | 219.034   | 219.222   | 219.523   | 219.549   | 219.149   |
| <b>180</b> | 220.470  | 220.470  | 220.470   | 220.470   | 220.470   | 220.470   | 220.470   | 220.470   | 220.470   | 220.470   |

**Vert.  
Angles**

**Horizontal Angles**

|           | <b>50</b> | <b>55</b> | <b>60</b> | <b>65</b> | <b>70</b> | <b>75</b> | <b>80</b> | <b>85</b> | <b>90</b> |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| <b>0</b>  | 486.673   | 486.673   | 486.673   | 486.673   | 486.673   | 486.673   | 486.673   | 486.673   | 486.673   |
| <b>5</b>  | 483.907   | 483.917   | 483.938   | 483.980   | 484.000   | 483.995   | 484.026   | 484.058   | 484.120   |
| <b>10</b> | 476.242   | 476.284   | 476.320   | 476.351   | 476.382   | 476.382   | 476.408   | 476.466   | 476.518   |
| <b>15</b> | 463.559   | 463.632   | 463.679   | 463.741   | 463.783   | 463.757   | 463.757   | 463.793   | 463.824   |
| <b>20</b> | 446.451   | 446.508   | 446.545   | 446.592   | 446.638   | 446.654   | 446.696   | 446.690   | 446.659   |
| <b>25</b> | 424.783   | 424.856   | 424.928   | 424.954   | 424.996   | 425.022   | 425.058   | 425.038   | 425.017   |
| <b>30</b> | 399.490   | 399.552   | 399.636   | 399.693   | 399.740   | 399.771   | 399.771   | 399.792   | 399.781   |
| <b>35</b> | 371.192   | 371.275   | 371.389   | 371.436   | 371.509   | 371.530   | 371.519   | 371.530   | 371.488   |
| <b>40</b> | 340.402   | 340.480   | 340.543   | 340.631   | 340.688   | 340.714   | 340.699   | 340.683   | 340.636   |
| <b>45</b> | 307.174   | 307.242   | 307.310   | 307.362   | 307.434   | 307.471   | 307.471   | 307.429   | 307.424   |
| <b>50</b> | 271.856   | 271.991   | 272.085   | 272.158   | 272.199   | 272.277   | 272.277   | 272.225   | 272.262   |
| <b>55</b> | 235.544   | 235.607   | 235.706   | 235.763   | 235.830   | 235.898   | 235.940   | 235.924   | 235.914   |
| <b>60</b> | 202.389   | 202.426   | 202.483   | 202.514   | 202.561   | 202.628   | 202.691   | 202.639   | 202.623   |

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**CANDELA TABULATION - (Cont.)**

|            |         |         |         |         |         |         |         |         |         |
|------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| <b>65</b>  | 164.419 | 164.450 | 164.486 | 164.518 | 164.512 | 164.523 | 164.559 | 164.518 | 164.502 |
| <b>70</b>  | 126.261 | 126.303 | 126.329 | 126.318 | 126.344 | 126.303 | 126.339 | 126.292 | 126.209 |
| <b>75</b>  | 89.352  | 89.372  | 89.367  | 89.362  | 89.378  | 89.378  | 89.404  | 89.362  | 89.305  |
| <b>80</b>  | 54.215  | 54.210  | 54.200  | 54.189  | 54.194  | 54.205  | 54.226  | 54.168  | 54.085  |
| <b>85</b>  | 22.662  | 22.636  | 22.594  | 22.552  | 22.500  | 22.454  | 22.443  | 22.360  | 22.339  |
| <b>90</b>  | 0.000   | 0.000   | 0.000   | 0.000   | 0.000   | 0.000   | 0.000   | 0.000   | 0.000   |
| <b>95</b>  | 10.254  | 10.265  | 10.317  | 10.322  | 10.395  | 10.488  | 10.514  | 10.301  | 10.213  |
| <b>100</b> | 19.776  | 19.739  | 19.750  | 19.724  | 19.760  | 19.765  | 19.640  | 19.323  | 19.297  |
| <b>105</b> | 31.985  | 31.996  | 32.001  | 31.897  | 31.725  | 31.637  | 31.377  | 31.002  | 30.956  |
| <b>110</b> | 45.006  | 44.975  | 44.944  | 44.803  | 44.720  | 44.606  | 44.278  | 44.127  | 44.070  |
| <b>115</b> | 59.046  | 59.030  | 58.958  | 59.056  | 58.942  | 58.614  | 58.438  | 58.193  | 58.100  |
| <b>120</b> | 73.466  | 73.554  | 73.668  | 73.705  | 73.549  | 73.174  | 72.956  | 72.826  | 72.571  |
| <b>125</b> | 87.708  | 87.906  | 87.953  | 87.922  | 87.771  | 87.308  | 87.183  | 87.105  | 86.804  |
| <b>130</b> | 104.281 | 104.400 | 104.343 | 104.192 | 103.813 | 103.584 | 103.418 | 103.360 | 103.210 |
| <b>135</b> | 121.654 | 121.612 | 121.472 | 121.222 | 120.905 | 120.578 | 120.458 | 120.448 | 120.364 |
| <b>140</b> | 138.694 | 138.622 | 138.299 | 137.972 | 137.540 | 136.916 | 136.864 | 136.729 | 136.521 |
| <b>145</b> | 155.064 | 154.809 | 154.419 | 154.206 | 154.055 | 153.754 | 153.624 | 153.546 | 153.504 |
| <b>150</b> | 170.513 | 170.331 | 170.123 | 169.858 | 169.588 | 169.619 | 169.369 | 169.556 | 169.790 |
| <b>155</b> | 184.662 | 184.595 | 184.496 | 184.194 | 183.716 | 183.617 | 183.841 | 183.425 | 183.529 |
| <b>160</b> | 196.981 | 196.971 | 196.841 | 196.414 | 196.134 | 196.097 | 195.780 | 196.617 | 196.378 |
| <b>165</b> | 207.106 | 207.048 | 206.612 | 206.445 | 206.305 | 205.847 | 206.294 | 206.820 | 206.554 |
| <b>170</b> | 214.750 | 214.588 | 214.323 | 214.105 | 213.834 | 213.808 | 213.793 | 213.756 | 213.720 |
| <b>175</b> | 219.565 | 219.419 | 219.201 | 218.904 | 218.431 | 218.275 | 218.093 | 217.781 | 217.958 |
| <b>180</b> | 220.470 | 220.470 | 220.470 | 220.470 | 220.470 | 220.470 | 220.470 | 220.470 | 220.470 |

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**ZONAL LUMEN SUMMARY**

| Zone    | Lumens  | %Lamp | %Fixt  |
|---------|---------|-------|--------|
| 0-20    | 176.69  | N.A.  | 9.40   |
| 0-30    | 372.32  | N.A.  | 19.90  |
| 0-40    | 604.46  | N.A.  | 32.30  |
| 0-60    | 1052.86 | N.A.  | 56.20  |
| 0-80    | 1310.56 | N.A.  | 70.00  |
| 0-90    | 1337.71 | N.A.  | 71.40  |
| 10-90   | 1291.76 | N.A.  | 69.00  |
| 20-40   | 427.78  | N.A.  | 22.80  |
| 20-50   | 664.57  | N.A.  | 35.50  |
| 40-70   | 611.27  | N.A.  | 32.60  |
| 60-80   | 257.70  | N.A.  | 13.80  |
| 70-80   | 94.84   | N.A.  | 5.10   |
| 80-90   | 27.14   | N.A.  | 1.40   |
| 90-110  | 45.12   | N.A.  | 2.40   |
| 90-120  | 103.58  | N.A.  | 5.50   |
| 90-130  | 182.21  | N.A.  | 9.70   |
| 90-150  | 371.25  | N.A.  | 19.80  |
| 90-180  | 534.77  | N.A.  | 28.60  |
| 110-180 | 489.65  | N.A.  | 26.10  |
| 0-180   | 1872.47 | N.A.  | 100.00 |

Total Luminaire Efficiency = N.A.%

**ZONAL LUMEN SUMMARY**

| Zone    | Lumens |
|---------|--------|
| 0-10    | 45.95  |
| 10-20   | 130.73 |
| 20-30   | 195.64 |
| 30-40   | 232.14 |
| 40-50   | 236.80 |
| 50-60   | 211.60 |
| 60-70   | 162.87 |
| 70-80   | 94.84  |
| 80-90   | 27.14  |
| 90-100  | 11.23  |
| 100-110 | 33.89  |
| 110-120 | 58.46  |
| 120-130 | 78.63  |
| 130-140 | 92.89  |
| 140-150 | 96.15  |
| 150-160 | 84.61  |
| 160-170 | 58.17  |
| 170-180 | 20.74  |

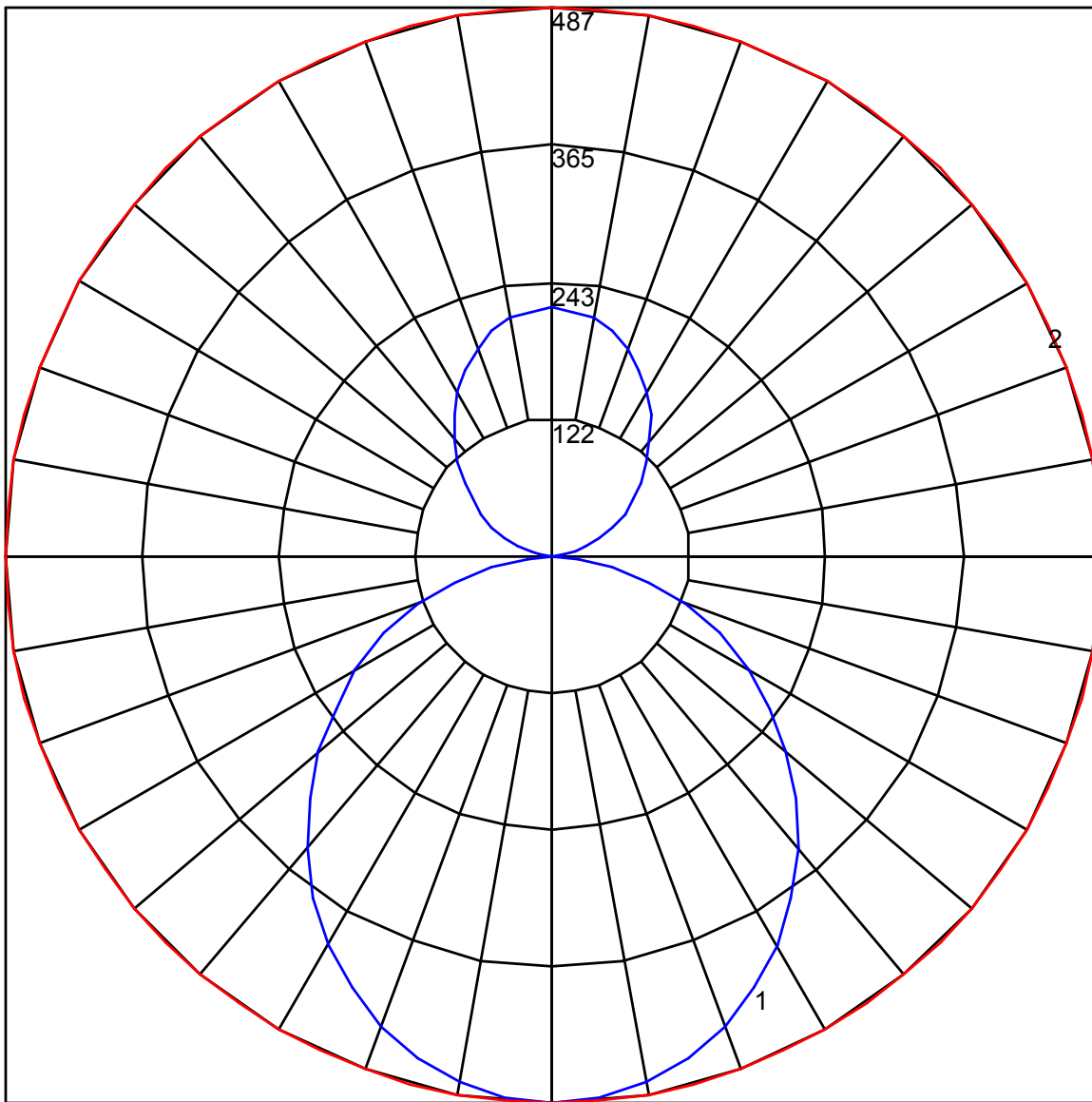
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**COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD**

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  | 112 | 112 | 112 | 112 | 106 | 106 | 106 | 106 | 95 | 95 | 95 | 85 | 85 | 85 | 76 | 76 | 76 | 71 |
| 1  | 102 | 98  | 94  | 90  | 97  | 93  | 89  | 86  | 83 | 81 | 78 | 75 | 73 | 71 | 67 | 65 | 64 | 60 |
| 2  | 93  | 85  | 79  | 73  | 88  | 81  | 75  | 70  | 73 | 68 | 64 | 65 | 62 | 59 | 58 | 56 | 53 | 50 |
| 3  | 85  | 75  | 67  | 61  | 80  | 71  | 64  | 58  | 64 | 59 | 54 | 58 | 53 | 49 | 52 | 48 | 45 | 42 |
| 4  | 78  | 66  | 58  | 51  | 73  | 63  | 55  | 50  | 57 | 51 | 46 | 51 | 46 | 42 | 46 | 42 | 39 | 36 |
| 5  | 71  | 59  | 50  | 44  | 67  | 56  | 48  | 43  | 51 | 45 | 40 | 46 | 41 | 37 | 41 | 37 | 34 | 31 |
| 6  | 66  | 53  | 45  | 38  | 62  | 51  | 43  | 37  | 46 | 39 | 35 | 42 | 36 | 32 | 38 | 33 | 30 | 27 |
| 7  | 61  | 48  | 40  | 34  | 57  | 46  | 38  | 33  | 42 | 35 | 31 | 38 | 32 | 28 | 34 | 30 | 26 | 24 |
| 8  | 57  | 44  | 36  | 30  | 53  | 42  | 34  | 29  | 38 | 32 | 27 | 35 | 29 | 25 | 31 | 27 | 24 | 21 |
| 9  | 53  | 40  | 32  | 27  | 50  | 38  | 31  | 26  | 35 | 29 | 24 | 32 | 27 | 23 | 29 | 25 | 21 | 19 |
| 10 | 49  | 37  | 29  | 24  | 47  | 35  | 28  | 23  | 32 | 26 | 22 | 30 | 24 | 21 | 27 | 23 | 19 | 17 |

POLAR GRAPH



Maximum Candela = 486.673 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.)