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**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : PNA-7511W.IES**

**DESCRIPTION INFORMATION (From Photometric File)**

IESNA:LM-63-2002  
[TEST] LLI-19280-2  
[TESTLAB] LightLab International ([www.LightLabInternational.com](http://www.LightLabInternational.com))  
[MANUFAC] Justice Design, 500 S Grand Ave Suite 1100, Los Angeles, CA 90071  
[LUMCAT] PNA-7511W  
[LUMINAIRE] Justice Design - Wall sconce luminaire. Product ID: FSN-7511W  
[MORE] Silver formed steel base and resin box lens with white interior.  
[MORE] 24 LEDs in circular array with white plastic dome cover.  
[MORE] No driver  
[MORE] Operating at 120v AC 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: Tuesday, October 15, 2019 10:58:43 AM  
[ISSUEDATE] Tuesday, October 15, 2019 10:58:43 AM

**CHARACTERISTICS**

|                                 |                     |
|---------------------------------|---------------------|
| Lumens Per Lamp                 | N.A. (absolute)     |
| Total Lamp Lumens               | N.A. (absolute)     |
| Luminaire Lumens                | 287                 |
| Total Luminaire Efficiency      | N.A.                |
| Luminaire Efficacy Rating (LER) | 37                  |
| Total Luminaire Watts           | 7.79                |
| 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            | Rectangular w/Sides |
| Luminous Length (0-180)         | 0.09 m              |
| Luminous Width (90-270)         | 0.09 m              |
| Luminous Height                 | 0.14 m              |

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

| Angle In<br>Degrees | Average<br>0-Deg | Average<br>45-Deg | Average<br>90-Deg |
|---------------------|------------------|-------------------|-------------------|
| 45                  | 1448             | 1261              | 1031              |
| 55                  | 1660             | 1457              | 1208              |
| 65                  | 1875             | 1644              | 1384              |
| 75                  | 2115             | 1820              | 1566              |
| 85                  | 2384             | 1998              | 1763              |

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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> |
|-------------|------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------|
| <b>0.0</b>  | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       | 0.000        | 0.000        | 0.000        | 0.000        |
| <b>0.5</b>  | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       | 0.000        | 0.000        | 0.000        | 0.000        |
| <b>1.0</b>  | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       | 0.000        | 0.000        | 0.000        | 0.000        |
| <b>1.5</b>  | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       | 0.000        | 0.000        | 0.000        | 0.000        |
| <b>2.0</b>  | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       | 0.000        | 0.000        | 0.000        | 0.000        |
| <b>2.5</b>  | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       | 0.000        | 0.000        | 0.000        | 0.000        |
| <b>3.0</b>  | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       | 0.000        | 0.000        | 0.000        | 0.000        |
| <b>3.5</b>  | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       | 0.000        | 0.000        | 0.000        | 0.000        |
| <b>4.0</b>  | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       | 0.000        | 0.000        | 0.000        | 0.000        |
| <b>4.5</b>  | 0.000      | 0.000       | 0.162       | 0.000       | 0.000       | 0.000        | 0.000        | 0.000        | 0.000        |
| <b>5.0</b>  | 0.162      | 0.128       | 0.162       | 0.000       | 0.111       | 0.136        | 0.000        | 0.000        | 0.000        |
| <b>5.5</b>  | 0.247      | 0.213       | 0.204       | 0.162       | 0.230       | 0.204        | 0.000        | 0.000        | 0.000        |
| <b>6.0</b>  | 0.349      | 0.349       | 0.281       | 0.340       | 0.340       | 0.315        | 0.162        | 0.000        | 0.000        |
| <b>6.5</b>  | 0.493      | 0.442       | 0.391       | 0.451       | 0.476       | 0.451        | 0.230        | 0.000        | 0.000        |
| <b>7.0</b>  | 0.697      | 0.621       | 0.510       | 0.578       | 0.629       | 0.553        | 0.391        | 0.000        | 0.000        |
| <b>7.5</b>  | 0.969      | 0.799       | 0.629       | 0.714       | 0.697       | 0.689        | 0.570        | 0.000        | 0.000        |
| <b>8.0</b>  | 1.233      | 1.012       | 0.782       | 0.799       | 0.850       | 0.884        | 0.714        | 0.162        | 0.000        |
| <b>8.5</b>  | 1.420      | 1.216       | 0.884       | 0.995       | 1.012       | 0.978        | 0.901        | 0.255        | 0.000        |
| <b>9.0</b>  | 1.632      | 1.377       | 1.097       | 1.156       | 1.139       | 1.122        | 1.071        | 0.323        | 0.204        |
| <b>9.5</b>  | 1.887      | 1.590       | 1.318       | 1.343       | 1.301       | 1.335        | 1.241        | 0.434        | 0.502        |
| <b>10.0</b> | 2.040      | 1.879       | 1.479       | 1.513       | 1.513       | 1.522        | 1.445        | 0.714        | 0.689        |
| <b>10.5</b> | 2.338      | 2.057       | 1.734       | 1.709       | 1.624       | 1.675        | 1.666        | 1.131        | 0.578        |
| <b>11.0</b> | 2.559      | 2.295       | 1.989       | 1.887       | 1.785       | 1.896        | 1.828        | 1.326        | 0.468        |
| <b>11.5</b> | 2.788      | 2.525       | 2.176       | 2.100       | 2.006       | 2.074        | 2.066        | 1.394        | 0.366        |
| <b>12.0</b> | 3.077      | 2.737       | 2.423       | 2.278       | 2.185       | 2.295        | 2.321        | 1.428        | 0.400        |
| <b>12.5</b> | 3.315      | 3.035       | 2.746       | 2.465       | 2.414       | 2.525        | 2.508        | 1.471        | 0.553        |
| <b>13.0</b> | 3.587      | 3.324       | 2.899       | 2.686       | 2.601       | 2.771        | 2.754        | 1.564        | 0.672        |
| <b>13.5</b> | 3.919      | 3.570       | 3.196       | 2.899       | 2.754       | 2.984        | 3.001        | 1.624        | 0.842        |
| <b>14.0</b> | 4.157      | 3.859       | 3.502       | 3.103       | 2.984       | 3.230        | 3.154        | 1.743        | 1.029        |
| <b>14.5</b> | 4.497      | 4.114       | 3.706       | 3.307       | 3.213       | 3.468        | 3.281        | 1.853        | 1.148        |
| <b>15.0</b> | 4.794      | 4.446       | 4.046       | 3.536       | 3.383       | 3.681        | 3.494        | 1.972        | 1.250        |
| <b>15.5</b> | 5.092      | 4.735       | 4.318       | 3.757       | 3.613       | 3.936        | 3.664        | 2.057        | 1.343        |
| <b>16.0</b> | 5.381      | 5.066       | 4.539       | 3.995       | 3.859       | 4.148        | 3.817        | 2.083        | 1.284        |
| <b>16.5</b> | 5.721      | 5.364       | 4.837       | 4.259       | 4.004       | 4.420        | 4.063        | 2.074        | 1.275        |
| <b>17.0</b> | 5.993      | 5.712       | 5.185       | 4.539       | 4.267       | 4.726        | 4.216        | 2.057        | 1.250        |
| <b>17.5</b> | 6.273      | 5.984       | 5.457       | 4.769       | 4.531       | 4.939        | 4.352        | 2.125        | 1.233        |
| <b>18.0</b> | 6.613      | 6.299       | 5.797       | 5.041       | 4.667       | 5.219        | 4.514        | 2.134        | 1.190        |
| <b>18.5</b> | 6.911      | 6.622       | 6.103       | 5.304       | 4.922       | 5.517        | 4.692        | 2.210        | 1.207        |
| <b>19.0</b> | 7.174      | 6.996       | 6.418       | 5.593       | 5.160       | 5.772        | 4.871        | 2.244        | 1.156        |
| <b>19.5</b> | 7.489      | 7.310       | 6.732       | 5.865       | 5.347       | 6.010        | 5.041        | 2.261        | 1.165        |
| <b>20.0</b> | 7.778      | 7.642       | 7.072       | 6.112       | 5.568       | 6.341        | 5.151        | 2.321        | 1.148        |
| <b>20.5</b> | 8.101      | 8.016       | 7.361       | 6.418       | 5.848       | 6.571        | 5.321        | 2.380        | 1.114        |
| <b>21.0</b> | 8.415      | 8.330       | 7.701       | 6.715       | 6.001       | 6.817        | 5.457        | 2.397        | 1.071        |
| <b>21.5</b> | 8.738      | 8.670       | 8.075       | 6.953       | 6.248       | 7.115        | 5.602        | 2.440        | 1.097        |
| <b>22.0</b> | 8.985      | 9.010       | 8.356       | 7.285       | 6.503       | 7.344        | 5.763        | 2.482        | 1.071        |
| <b>22.5</b> | 9.282      | 9.350       | 8.738       | 7.548       | 6.698       | 7.625        | 5.942        | 2.567        | 0.961        |
| <b>23.0</b> | 9.690      | 9.690       | 9.053       | 7.803       | 6.962       | 7.880        | 6.095        | 2.567        | 0.961        |
| <b>23.5</b> | 9.954      | 10.073      | 9.376       | 8.135       | 7.217       | 8.143        | 6.231        | 2.610        | 0.910        |
| <b>24.0</b> | 10.166     | 10.438      | 9.733       | 8.407       | 7.438       | 8.398        | 6.401        | 2.644        | 0.910        |
| <b>24.5</b> | 10.583     | 10.753      | 10.107      | 8.670       | 7.718       | 8.662        | 6.545        | 2.686        | 0.927        |
| <b>25.0</b> | 10.846     | 11.161      | 10.413      | 9.010       | 7.956       | 8.976        | 6.698        | 2.737        | 0.893        |
| <b>25.5</b> | 11.178     | 11.484      | 10.778      | 9.282       | 8.152       | 9.223        | 6.851        | 2.780        | 0.842        |
| <b>26.0</b> | 11.526     | 11.849      | 11.135      | 9.571       | 8.373       | 9.520        | 6.987        | 2.814        | 0.816        |
| <b>26.5</b> | 11.807     | 12.232      | 11.467      | 9.886       | 8.594       | 9.758        | 7.115        | 2.865        | 0.740        |

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**CANDELA TABULATION - (Cont.)**

|      |        |        |        |        |        |        |        |       |       |
|------|--------|--------|--------|--------|--------|--------|--------|-------|-------|
| 27.0 | 12.172 | 12.597 | 11.824 | 10.234 | 8.772  | 10.022 | 7.276  | 2.916 | 0.689 |
| 27.5 | 12.470 | 12.963 | 12.189 | 10.472 | 8.934  | 10.311 | 7.421  | 2.933 | 0.638 |
| 28.0 | 12.835 | 13.320 | 12.461 | 10.761 | 9.180  | 10.549 | 7.523  | 2.950 | 0.527 |
| 28.5 | 13.184 | 13.728 | 12.869 | 11.008 | 9.299  | 10.719 | 7.701  | 3.001 | 0.476 |
| 29.0 | 13.473 | 14.093 | 13.252 | 11.254 | 9.495  | 10.974 | 7.803  | 3.018 | 0.442 |
| 29.5 | 13.787 | 14.527 | 13.600 | 11.509 | 9.682  | 11.178 | 7.948  | 3.035 | 0.400 |
| 30.0 | 14.059 | 14.875 | 13.906 | 11.790 | 9.843  | 11.373 | 8.092  | 3.009 | 0.349 |
| 30.5 | 14.374 | 15.249 | 14.280 | 12.011 | 10.039 | 11.620 | 8.203  | 3.086 | 0.374 |
| 31.0 | 14.680 | 15.640 | 14.612 | 12.283 | 10.226 | 11.824 | 8.296  | 3.111 | 0.383 |
| 31.5 | 14.926 | 15.972 | 14.986 | 12.538 | 10.362 | 12.011 | 8.458  | 3.171 | 0.366 |
| 32.0 | 15.164 | 16.320 | 15.368 | 12.784 | 10.574 | 12.249 | 8.568  | 3.205 | 0.349 |
| 32.5 | 15.479 | 16.669 | 15.666 | 13.022 | 10.736 | 12.453 | 8.662  | 3.298 | 0.357 |
| 33.0 | 15.776 | 16.992 | 16.065 | 13.303 | 10.906 | 12.640 | 8.823  | 3.392 | 0.383 |
| 33.5 | 16.006 | 17.315 | 16.405 | 13.558 | 11.118 | 12.886 | 8.908  | 3.443 | 0.323 |
| 34.0 | 16.295 | 17.706 | 16.728 | 13.796 | 11.280 | 13.056 | 9.002  | 3.494 | 0.340 |
| 34.5 | 16.473 | 18.012 | 17.068 | 14.025 | 11.433 | 13.269 | 9.095  | 3.596 | 0.349 |
| 35.0 | 16.737 | 18.284 | 17.476 | 14.297 | 11.654 | 13.498 | 9.138  | 3.672 | 0.383 |
| 35.5 | 16.932 | 18.632 | 17.765 | 14.544 | 11.832 | 13.668 | 9.240  | 3.766 | 0.366 |
| 36.0 | 17.204 | 18.930 | 18.071 | 14.841 | 11.985 | 13.872 | 9.350  | 3.834 | 0.366 |
| 36.5 | 17.400 | 19.227 | 18.403 | 15.054 | 12.147 | 14.119 | 9.367  | 3.919 | 0.383 |
| 37.0 | 17.646 | 19.576 | 18.709 | 15.300 | 12.368 | 14.280 | 9.435  | 3.987 | 0.383 |
| 37.5 | 17.859 | 19.865 | 19.066 | 15.555 | 12.487 | 14.459 | 9.520  | 4.063 | 0.417 |
| 38.0 | 18.122 | 20.162 | 19.372 | 15.836 | 12.682 | 14.714 | 9.580  | 4.174 | 0.434 |
| 38.5 | 18.318 | 20.494 | 19.593 | 16.082 | 12.869 | 14.901 | 9.631  | 4.276 | 0.476 |
| 39.0 | 18.547 | 20.783 | 19.882 | 16.354 | 13.022 | 15.079 | 9.724  | 4.378 | 0.502 |
| 39.5 | 18.819 | 21.114 | 20.222 | 16.584 | 13.235 | 15.309 | 9.809  | 4.403 | 0.536 |
| 40.0 | 18.998 | 21.361 | 20.477 | 16.847 | 13.396 | 15.462 | 9.937  | 4.556 | 0.570 |
| 40.5 | 19.244 | 21.684 | 20.757 | 17.094 | 13.549 | 15.666 | 10.064 | 4.650 | 0.561 |
| 41.0 | 19.491 | 21.981 | 21.029 | 17.340 | 13.702 | 15.870 | 10.149 | 4.760 | 0.595 |
| 41.5 | 19.678 | 22.270 | 21.276 | 17.612 | 13.881 | 16.057 | 10.260 | 4.845 | 0.578 |
| 42.0 | 19.882 | 22.585 | 21.565 | 17.850 | 14.051 | 16.193 | 10.336 | 4.981 | 0.604 |
| 42.5 | 20.094 | 22.857 | 21.828 | 18.105 | 14.221 | 16.431 | 10.489 | 5.075 | 0.612 |
| 43.0 | 20.332 | 23.137 | 22.092 | 18.343 | 14.399 | 16.626 | 10.583 | 5.168 | 0.604 |
| 43.5 | 20.528 | 23.435 | 22.372 | 18.615 | 14.510 | 16.788 | 10.736 | 5.270 | 0.587 |
| 44.0 | 20.757 | 23.749 | 22.636 | 18.870 | 14.714 | 17.000 | 10.787 | 5.296 | 0.638 |
| 44.5 | 20.961 | 23.996 | 22.865 | 19.100 | 14.918 | 17.179 | 10.897 | 5.415 | 0.638 |
| 45.0 | 21.148 | 24.302 | 23.129 | 19.355 | 15.054 | 17.340 | 11.059 | 5.534 | 0.595 |
| 45.5 | 21.369 | 24.514 | 23.469 | 19.618 | 15.215 | 17.519 | 11.144 | 5.585 | 0.621 |
| 46.0 | 21.590 | 24.854 | 23.681 | 19.831 | 15.394 | 17.731 | 11.229 | 5.670 | 0.646 |
| 46.5 | 21.769 | 25.126 | 23.919 | 20.086 | 15.513 | 17.859 | 11.348 | 5.772 | 0.604 |
| 47.0 | 21.956 | 25.381 | 24.191 | 20.315 | 15.700 | 18.071 | 11.467 | 5.840 | 0.646 |
| 47.5 | 22.134 | 25.687 | 24.472 | 20.570 | 15.887 | 18.224 | 11.569 | 5.916 | 0.672 |
| 48.0 | 22.364 | 25.917 | 24.693 | 20.842 | 16.014 | 18.352 | 11.713 | 6.018 | 0.629 |
| 48.5 | 22.525 | 26.172 | 24.999 | 21.072 | 16.150 | 18.581 | 11.824 | 6.095 | 0.680 |
| 49.0 | 22.695 | 26.461 | 25.211 | 21.301 | 16.363 | 18.743 | 11.909 | 6.163 | 0.663 |
| 49.5 | 22.882 | 26.716 | 25.466 | 21.556 | 16.490 | 18.887 | 12.036 | 6.273 | 0.638 |
| 50.0 | 23.095 | 26.971 | 25.738 | 21.769 | 16.643 | 19.083 | 12.121 | 6.333 | 0.638 |
| 50.5 | 23.256 | 27.260 | 25.985 | 21.981 | 16.822 | 19.261 | 12.249 | 6.426 | 0.680 |
| 51.0 | 23.477 | 27.498 | 26.180 | 22.245 | 16.924 | 19.372 | 12.376 | 6.503 | 0.714 |
| 51.5 | 23.613 | 27.744 | 26.495 | 22.474 | 17.102 | 19.559 | 12.470 | 6.571 | 0.740 |
| 52.0 | 23.809 | 27.991 | 26.707 | 22.721 | 17.238 | 19.729 | 12.589 | 6.673 | 0.723 |
| 52.5 | 24.021 | 28.220 | 26.928 | 22.908 | 17.400 | 19.839 | 12.708 | 6.732 | 0.748 |
| 53.0 | 24.208 | 28.416 | 27.209 | 23.137 | 17.544 | 20.018 | 12.776 | 6.783 | 0.825 |
| 53.5 | 24.361 | 28.671 | 27.438 | 23.367 | 17.731 | 20.179 | 12.895 | 6.868 | 0.825 |
| 54.0 | 24.565 | 28.883 | 27.685 | 23.588 | 17.799 | 20.264 | 13.039 | 6.953 | 0.901 |
| 54.5 | 24.761 | 29.096 | 27.897 | 23.792 | 17.969 | 20.451 | 13.141 | 7.004 | 0.901 |

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**CANDELA TABULATION - (Cont.)**

|      |        |        |        |        |        |        |        |        |       |
|------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| 55.0 | 24.863 | 29.317 | 28.118 | 24.013 | 18.088 | 20.570 | 13.218 | 7.098  | 0.952 |
| 55.5 | 25.084 | 29.538 | 28.339 | 24.217 | 18.233 | 20.732 | 13.345 | 7.225  | 0.978 |
| 56.0 | 25.254 | 29.725 | 28.628 | 24.429 | 18.411 | 20.876 | 13.456 | 7.259  | 1.063 |
| 56.5 | 25.373 | 29.963 | 28.815 | 24.625 | 18.547 | 21.004 | 13.515 | 7.412  | 1.088 |
| 57.0 | 25.509 | 30.150 | 29.045 | 24.812 | 18.683 | 21.148 | 13.634 | 7.514  | 1.097 |
| 57.5 | 25.730 | 30.328 | 29.266 | 25.007 | 18.768 | 21.335 | 13.745 | 7.608  | 1.165 |
| 58.0 | 25.866 | 30.549 | 29.495 | 25.186 | 18.964 | 21.514 | 13.830 | 7.684  | 1.207 |
| 58.5 | 26.036 | 30.753 | 29.699 | 25.381 | 19.074 | 21.633 | 13.957 | 7.786  | 1.216 |
| 59.0 | 26.197 | 30.906 | 29.929 | 25.534 | 19.176 | 21.769 | 14.076 | 7.871  | 1.309 |
| 59.5 | 26.333 | 31.170 | 30.107 | 25.730 | 19.321 | 21.879 | 14.153 | 7.982  | 1.343 |
| 60.0 | 26.512 | 31.323 | 30.320 | 25.917 | 19.423 | 22.007 | 14.263 | 8.050  | 1.326 |
| 60.5 | 26.639 | 31.484 | 30.541 | 26.087 | 19.542 | 22.143 | 14.357 | 8.160  | 1.403 |
| 61.0 | 26.801 | 31.688 | 30.736 | 26.274 | 19.712 | 22.313 | 14.459 | 8.271  | 1.488 |
| 61.5 | 26.928 | 31.841 | 30.923 | 26.427 | 19.814 | 22.423 | 14.612 | 8.339  | 1.505 |
| 62.0 | 27.124 | 32.045 | 31.153 | 26.605 | 19.907 | 22.568 | 14.680 | 8.441  | 1.641 |
| 62.5 | 27.217 | 32.207 | 31.374 | 26.750 | 20.086 | 22.729 | 14.816 | 8.568  | 1.675 |
| 63.0 | 27.387 | 32.394 | 31.518 | 26.962 | 20.171 | 22.806 | 14.935 | 8.713  | 1.760 |
| 63.5 | 27.540 | 32.538 | 31.756 | 27.115 | 20.264 | 22.967 | 15.037 | 8.781  | 1.862 |
| 64.0 | 27.651 | 32.725 | 31.943 | 27.243 | 20.417 | 23.086 | 15.147 | 8.866  | 1.904 |
| 64.5 | 27.804 | 32.895 | 32.079 | 27.430 | 20.519 | 23.180 | 15.249 | 8.968  | 2.066 |
| 65.0 | 27.923 | 33.065 | 32.334 | 27.591 | 20.613 | 23.358 | 15.343 | 9.078  | 2.168 |
| 65.5 | 28.076 | 33.218 | 32.479 | 27.744 | 20.749 | 23.452 | 15.470 | 9.172  | 2.270 |
| 66.0 | 28.229 | 33.405 | 32.649 | 27.889 | 20.859 | 23.554 | 15.564 | 9.308  | 2.363 |
| 66.5 | 28.390 | 33.550 | 32.861 | 28.016 | 20.970 | 23.698 | 15.666 | 9.367  | 2.406 |
| 67.0 | 28.450 | 33.720 | 32.989 | 28.161 | 21.063 | 23.817 | 15.768 | 9.503  | 2.491 |
| 67.5 | 28.637 | 33.890 | 33.142 | 28.356 | 21.148 | 23.894 | 15.878 | 9.605  | 2.601 |
| 68.0 | 28.756 | 34.009 | 33.337 | 28.492 | 21.259 | 24.055 | 15.989 | 9.690  | 2.669 |
| 68.5 | 28.926 | 34.196 | 33.507 | 28.637 | 21.352 | 24.157 | 16.099 | 9.741  | 2.695 |
| 69.0 | 29.019 | 34.357 | 33.652 | 28.798 | 21.480 | 24.242 | 16.244 | 9.835  | 2.763 |
| 69.5 | 29.164 | 34.476 | 33.881 | 28.900 | 21.531 | 24.387 | 16.312 | 9.945  | 2.873 |
| 70.0 | 29.257 | 34.646 | 33.992 | 29.002 | 21.658 | 24.497 | 16.388 | 10.030 | 2.890 |
| 70.5 | 29.342 | 34.765 | 34.102 | 29.164 | 21.709 | 24.574 | 16.541 | 10.141 | 2.984 |
| 71.0 | 29.529 | 34.918 | 34.340 | 29.300 | 21.811 | 24.744 | 16.584 | 10.209 | 3.060 |
| 71.5 | 29.614 | 35.071 | 34.459 | 29.419 | 21.913 | 24.812 | 16.703 | 10.319 | 3.069 |
| 72.0 | 29.759 | 35.199 | 34.578 | 29.572 | 21.990 | 24.905 | 16.813 | 10.404 | 3.128 |
| 72.5 | 29.827 | 35.309 | 34.748 | 29.665 | 22.075 | 25.024 | 16.907 | 10.506 | 3.213 |
| 73.0 | 29.954 | 35.471 | 34.910 | 29.784 | 22.168 | 25.152 | 17.000 | 10.574 | 3.247 |
| 73.5 | 30.039 | 35.607 | 35.020 | 29.954 | 22.236 | 25.211 | 17.094 | 10.676 | 3.298 |
| 74.0 | 30.175 | 35.700 | 35.173 | 30.031 | 22.347 | 25.339 | 17.170 | 10.761 | 3.349 |
| 74.5 | 30.218 | 35.819 | 35.284 | 30.124 | 22.423 | 25.424 | 17.255 | 10.838 | 3.400 |
| 75.0 | 30.354 | 35.947 | 35.386 | 30.243 | 22.466 | 25.475 | 17.357 | 10.914 | 3.468 |
| 75.5 | 30.464 | 36.032 | 35.573 | 30.362 | 22.559 | 25.628 | 17.425 | 10.991 | 3.570 |
| 76.0 | 30.515 | 36.176 | 35.649 | 30.464 | 22.636 | 25.696 | 17.485 | 11.067 | 3.621 |
| 76.5 | 30.609 | 36.261 | 35.768 | 30.575 | 22.678 | 25.764 | 17.587 | 11.118 | 3.672 |
| 77.0 | 30.728 | 36.363 | 35.930 | 30.685 | 22.772 | 25.857 | 17.697 | 11.220 | 3.715 |
| 77.5 | 30.762 | 36.499 | 35.989 | 30.753 | 22.840 | 25.968 | 17.723 | 11.305 | 3.825 |
| 78.0 | 30.847 | 36.567 | 36.066 | 30.881 | 22.899 | 26.010 | 17.850 | 11.382 | 3.868 |
| 78.5 | 30.940 | 36.661 | 36.227 | 30.940 | 22.984 | 26.129 | 17.901 | 11.458 | 3.953 |
| 79.0 | 31.025 | 36.797 | 36.329 | 31.017 | 23.044 | 26.206 | 17.995 | 11.535 | 3.987 |
| 79.5 | 31.102 | 36.890 | 36.389 | 31.093 | 23.069 | 26.248 | 18.071 | 11.603 | 3.987 |
| 80.0 | 31.187 | 36.907 | 36.516 | 31.187 | 23.120 | 26.342 | 18.148 | 11.679 | 4.055 |
| 80.5 | 31.306 | 37.069 | 36.567 | 31.272 | 23.214 | 26.435 | 18.190 | 11.747 | 4.131 |
| 81.0 | 31.340 | 37.137 | 36.678 | 31.357 | 23.205 | 26.444 | 18.275 | 11.841 | 4.174 |
| 81.5 | 31.450 | 37.213 | 36.780 | 31.433 | 23.239 | 26.571 | 18.343 | 11.909 | 4.276 |
| 82.0 | 31.527 | 37.324 | 36.856 | 31.518 | 23.358 | 26.622 | 18.403 | 11.985 | 4.301 |
| 82.5 | 31.544 | 37.383 | 36.882 | 31.510 | 23.384 | 26.648 | 18.479 | 12.045 | 4.369 |

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**CANDELA TABULATION - (Cont.)**

|              |        |        |        |        |        |        |        |        |        |
|--------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| <b>83.0</b>  | 31.654 | 37.443 | 37.001 | 31.637 | 23.401 | 26.741 | 18.539 | 12.130 | 4.420  |
| <b>83.5</b>  | 31.680 | 37.553 | 37.069 | 31.688 | 23.469 | 26.826 | 18.598 | 12.181 | 4.463  |
| <b>84.0</b>  | 31.756 | 37.621 | 37.094 | 31.756 | 23.494 | 26.852 | 18.666 | 12.300 | 4.488  |
| <b>84.5</b>  | 31.841 | 37.689 | 37.205 | 31.816 | 23.528 | 26.928 | 18.734 | 12.351 | 4.590  |
| <b>85.0</b>  | 31.884 | 37.757 | 37.222 | 31.884 | 23.579 | 26.945 | 18.768 | 12.393 | 4.641  |
| <b>85.5</b>  | 31.901 | 37.825 | 37.273 | 31.909 | 23.613 | 26.988 | 18.870 | 12.504 | 4.701  |
| <b>86.0</b>  | 32.020 | 37.876 | 37.366 | 31.969 | 23.630 | 27.073 | 18.921 | 12.512 | 4.794  |
| <b>86.5</b>  | 32.045 | 37.927 | 37.392 | 32.020 | 23.681 | 27.141 | 18.989 | 12.597 | 4.803  |
| <b>87.0</b>  | 32.096 | 38.046 | 37.451 | 32.071 | 23.715 | 27.141 | 19.023 | 12.699 | 4.871  |
| <b>87.5</b>  | 32.147 | 38.038 | 37.511 | 32.105 | 23.724 | 27.200 | 19.074 | 12.776 | 4.947  |
| <b>88.0</b>  | 32.181 | 38.123 | 37.553 | 32.156 | 23.766 | 27.243 | 19.100 | 12.784 | 4.998  |
| <b>88.5</b>  | 32.215 | 38.199 | 37.604 | 32.215 | 23.792 | 27.302 | 19.151 | 12.912 | 5.015  |
| <b>89.0</b>  | 32.300 | 38.174 | 37.647 | 32.241 | 23.775 | 27.319 | 19.210 | 12.929 | 5.109  |
| <b>89.5</b>  | 32.292 | 38.250 | 37.681 | 32.241 | 23.809 | 27.379 | 19.236 | 12.988 | 5.126  |
| <b>90.0</b>  | 32.300 | 38.301 | 37.672 | 32.317 | 23.817 | 27.430 | 19.312 | 13.039 | 5.194  |
| <b>90.5</b>  | 32.368 | 38.327 | 37.723 | 32.334 | 23.834 | 27.430 | 19.363 | 13.107 | 5.279  |
| <b>91.0</b>  | 32.402 | 38.378 | 37.749 | 32.368 | 23.885 | 27.506 | 19.423 | 13.218 | 5.364  |
| <b>91.5</b>  | 32.428 | 38.437 | 37.757 | 32.394 | 23.928 | 27.591 | 19.516 | 13.328 | 5.423  |
| <b>92.0</b>  | 32.547 | 38.463 | 37.868 | 32.462 | 24.021 | 27.642 | 19.627 | 13.422 | 5.542  |
| <b>92.5</b>  | 32.623 | 38.573 | 37.927 | 32.547 | 24.089 | 27.727 | 19.703 | 13.515 | 5.678  |
| <b>93.0</b>  | 32.691 | 38.675 | 38.004 | 32.589 | 24.098 | 27.812 | 19.822 | 13.660 | 5.763  |
| <b>93.5</b>  | 32.776 | 38.718 | 38.097 | 32.666 | 24.183 | 27.889 | 19.950 | 13.770 | 5.916  |
| <b>94.0</b>  | 32.836 | 38.828 | 38.123 | 32.751 | 24.268 | 27.957 | 20.035 | 13.906 | 6.027  |
| <b>94.5</b>  | 32.963 | 38.888 | 38.208 | 32.819 | 24.370 | 28.016 | 20.137 | 14.017 | 6.137  |
| <b>95.0</b>  | 33.048 | 38.981 | 38.293 | 32.912 | 24.387 | 28.093 | 20.230 | 14.093 | 6.307  |
| <b>95.5</b>  | 33.125 | 39.092 | 38.335 | 32.938 | 24.489 | 28.229 | 20.341 | 14.212 | 6.418  |
| <b>96.0</b>  | 33.193 | 39.177 | 38.403 | 32.989 | 24.548 | 28.263 | 20.460 | 14.323 | 6.528  |
| <b>96.5</b>  | 33.346 | 39.228 | 38.505 | 33.108 | 24.633 | 28.339 | 20.553 | 14.459 | 6.673  |
| <b>97.0</b>  | 33.380 | 39.296 | 38.565 | 33.167 | 24.718 | 28.424 | 20.664 | 14.586 | 6.732  |
| <b>97.5</b>  | 33.490 | 39.432 | 38.641 | 33.201 | 24.752 | 28.501 | 20.774 | 14.697 | 6.902  |
| <b>98.0</b>  | 33.524 | 39.457 | 38.709 | 33.303 | 24.812 | 28.543 | 20.876 | 14.782 | 7.004  |
| <b>98.5</b>  | 33.686 | 39.517 | 38.735 | 33.312 | 24.922 | 28.628 | 20.936 | 14.892 | 7.072  |
| <b>99.0</b>  | 33.711 | 39.610 | 38.803 | 33.363 | 24.973 | 28.679 | 21.089 | 14.994 | 7.251  |
| <b>99.5</b>  | 33.822 | 39.653 | 38.879 | 33.422 | 25.016 | 28.722 | 21.165 | 15.122 | 7.370  |
| <b>100.0</b> | 33.856 | 39.755 | 38.922 | 33.456 | 25.109 | 28.832 | 21.225 | 15.198 | 7.523  |
| <b>100.5</b> | 33.949 | 39.814 | 38.947 | 33.507 | 25.135 | 28.892 | 21.344 | 15.368 | 7.574  |
| <b>101.0</b> | 34.043 | 39.814 | 39.007 | 33.584 | 25.177 | 28.943 | 21.454 | 15.470 | 7.735  |
| <b>101.5</b> | 34.060 | 39.891 | 39.015 | 33.601 | 25.271 | 29.028 | 21.531 | 15.564 | 7.888  |
| <b>102.0</b> | 34.085 | 39.950 | 39.049 | 33.669 | 25.322 | 29.070 | 21.641 | 15.683 | 7.965  |
| <b>102.5</b> | 34.170 | 39.984 | 39.126 | 33.694 | 25.356 | 29.079 | 21.735 | 15.776 | 8.152  |
| <b>103.0</b> | 34.255 | 40.052 | 39.109 | 33.737 | 25.398 | 29.181 | 21.769 | 15.887 | 8.211  |
| <b>103.5</b> | 34.281 | 40.095 | 39.134 | 33.771 | 25.466 | 29.206 | 21.896 | 15.980 | 8.313  |
| <b>104.0</b> | 34.332 | 40.112 | 39.211 | 33.839 | 25.500 | 29.257 | 22.024 | 16.133 | 8.492  |
| <b>104.5</b> | 34.425 | 40.146 | 39.211 | 33.788 | 25.543 | 29.325 | 22.075 | 16.201 | 8.628  |
| <b>105.0</b> | 34.408 | 40.180 | 39.194 | 33.873 | 25.585 | 29.376 | 22.143 | 16.303 | 8.704  |
| <b>105.5</b> | 34.527 | 40.214 | 39.253 | 33.873 | 25.619 | 29.402 | 22.270 | 16.414 | 8.874  |
| <b>106.0</b> | 34.536 | 40.214 | 39.262 | 33.898 | 25.662 | 29.436 | 22.313 | 16.516 | 8.976  |
| <b>106.5</b> | 34.561 | 40.273 | 39.253 | 33.898 | 25.704 | 29.504 | 22.381 | 16.609 | 9.078  |
| <b>107.0</b> | 34.604 | 40.256 | 39.262 | 33.975 | 25.721 | 29.529 | 22.491 | 16.720 | 9.189  |
| <b>107.5</b> | 34.604 | 40.290 | 39.245 | 33.949 | 25.764 | 29.563 | 22.551 | 16.805 | 9.299  |
| <b>108.0</b> | 34.655 | 40.316 | 39.262 | 33.983 | 25.806 | 29.614 | 22.644 | 16.907 | 9.452  |
| <b>108.5</b> | 34.680 | 40.316 | 39.262 | 34.000 | 25.806 | 29.657 | 22.712 | 17.026 | 9.563  |
| <b>109.0</b> | 34.697 | 40.341 | 39.219 | 33.966 | 25.857 | 29.674 | 22.789 | 17.102 | 9.682  |
| <b>109.5</b> | 34.697 | 40.358 | 39.228 | 33.966 | 25.883 | 29.682 | 22.857 | 17.162 | 9.775  |
| <b>110.0</b> | 34.799 | 40.316 | 39.219 | 34.017 | 25.891 | 29.725 | 22.916 | 17.289 | 9.979  |
| <b>110.5</b> | 34.757 | 40.316 | 39.211 | 33.975 | 25.908 | 29.725 | 22.967 | 17.374 | 10.030 |

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**CANDELA TABULATION - (Cont.)**

|       |        |        |        |        |        |        |        |        |        |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 111.0 | 34.748 | 40.324 | 39.194 | 33.941 | 25.968 | 29.776 | 23.035 | 17.493 | 10.149 |
| 111.5 | 34.808 | 40.282 | 39.194 | 33.992 | 25.968 | 29.750 | 23.120 | 17.570 | 10.294 |
| 112.0 | 34.782 | 40.324 | 39.194 | 33.941 | 25.993 | 29.818 | 23.154 | 17.655 | 10.387 |
| 112.5 | 34.740 | 40.307 | 39.109 | 33.924 | 25.993 | 29.827 | 23.222 | 17.782 | 10.506 |
| 113.0 | 34.748 | 40.282 | 39.083 | 33.966 | 25.993 | 29.818 | 23.316 | 17.825 | 10.642 |
| 113.5 | 34.765 | 40.231 | 39.083 | 33.941 | 26.053 | 29.852 | 23.358 | 17.944 | 10.770 |
| 114.0 | 34.774 | 40.222 | 39.015 | 33.915 | 26.019 | 29.861 | 23.409 | 18.003 | 10.821 |
| 114.5 | 34.782 | 40.154 | 39.007 | 33.898 | 26.027 | 29.878 | 23.477 | 18.122 | 10.991 |
| 115.0 | 34.799 | 40.146 | 38.939 | 33.864 | 26.019 | 29.929 | 23.520 | 18.199 | 11.093 |
| 115.5 | 34.723 | 40.103 | 38.888 | 33.788 | 26.036 | 29.878 | 23.562 | 18.292 | 11.169 |
| 116.0 | 34.740 | 40.044 | 38.828 | 33.813 | 26.044 | 29.869 | 23.664 | 18.360 | 11.322 |
| 116.5 | 34.697 | 40.018 | 38.803 | 33.737 | 26.087 | 29.861 | 23.647 | 18.437 | 11.441 |
| 117.0 | 34.672 | 40.018 | 38.752 | 33.720 | 26.070 | 29.895 | 23.715 | 18.513 | 11.526 |
| 117.5 | 34.655 | 39.933 | 38.692 | 33.703 | 26.044 | 29.869 | 23.800 | 18.598 | 11.705 |
| 118.0 | 34.604 | 39.882 | 38.633 | 33.643 | 26.044 | 29.827 | 23.826 | 18.658 | 11.807 |
| 118.5 | 34.570 | 39.840 | 38.573 | 33.592 | 26.036 | 29.844 | 23.877 | 18.768 | 11.892 |
| 119.0 | 34.527 | 39.746 | 38.497 | 33.575 | 26.036 | 29.827 | 23.919 | 18.828 | 12.028 |
| 119.5 | 34.536 | 39.704 | 38.429 | 33.507 | 26.044 | 29.835 | 23.936 | 18.904 | 12.147 |
| 120.0 | 34.442 | 39.644 | 38.352 | 33.448 | 26.027 | 29.810 | 23.979 | 18.989 | 12.215 |
| 120.5 | 34.451 | 39.568 | 38.327 | 33.414 | 26.002 | 29.827 | 24.013 | 19.057 | 12.334 |
| 121.0 | 34.383 | 39.517 | 38.225 | 33.346 | 25.993 | 29.767 | 24.055 | 19.142 | 12.436 |
| 121.5 | 34.315 | 39.483 | 38.106 | 33.286 | 25.959 | 29.776 | 24.098 | 19.202 | 12.555 |
| 122.0 | 34.323 | 39.355 | 38.063 | 33.235 | 25.942 | 29.742 | 24.106 | 19.270 | 12.716 |
| 122.5 | 34.272 | 39.262 | 37.987 | 33.150 | 25.934 | 29.691 | 24.115 | 19.355 | 12.750 |
| 123.0 | 34.204 | 39.228 | 37.859 | 33.091 | 25.951 | 29.674 | 24.166 | 19.346 | 12.844 |
| 123.5 | 34.119 | 39.126 | 37.817 | 33.048 | 25.908 | 29.648 | 24.208 | 19.448 | 12.954 |
| 124.0 | 34.077 | 39.007 | 37.715 | 32.972 | 25.883 | 29.648 | 24.234 | 19.499 | 13.073 |
| 124.5 | 34.009 | 38.947 | 37.587 | 32.853 | 25.857 | 29.572 | 24.259 | 19.576 | 13.167 |
| 125.0 | 33.941 | 38.794 | 37.485 | 32.776 | 25.815 | 29.529 | 24.293 | 19.644 | 13.303 |
| 125.5 | 33.856 | 38.735 | 37.392 | 32.691 | 25.772 | 29.487 | 24.293 | 19.703 | 13.345 |
| 126.0 | 33.796 | 38.667 | 37.273 | 32.589 | 25.755 | 29.470 | 24.336 | 19.754 | 13.481 |
| 126.5 | 33.737 | 38.531 | 37.205 | 32.521 | 25.721 | 29.393 | 24.353 | 19.797 | 13.549 |
| 127.0 | 33.660 | 38.429 | 37.094 | 32.445 | 25.704 | 29.342 | 24.319 | 19.873 | 13.643 |
| 127.5 | 33.550 | 38.361 | 36.941 | 32.292 | 25.628 | 29.291 | 24.395 | 19.933 | 13.753 |
| 128.0 | 33.567 | 38.216 | 36.831 | 32.207 | 25.577 | 29.223 | 24.378 | 19.941 | 13.847 |
| 128.5 | 33.431 | 38.089 | 36.720 | 32.088 | 25.585 | 29.164 | 24.421 | 20.035 | 13.966 |
| 129.0 | 33.320 | 37.970 | 36.610 | 31.960 | 25.551 | 29.087 | 24.412 | 20.086 | 14.017 |
| 129.5 | 33.261 | 37.825 | 36.465 | 31.901 | 25.509 | 28.985 | 24.404 | 20.137 | 14.110 |
| 130.0 | 33.125 | 37.715 | 36.338 | 31.756 | 25.432 | 28.951 | 24.446 | 20.171 | 14.187 |
| 130.5 | 33.023 | 37.621 | 36.210 | 31.629 | 25.424 | 28.875 | 24.421 | 20.196 | 14.272 |
| 131.0 | 32.946 | 37.460 | 36.066 | 31.544 | 25.279 | 28.781 | 24.421 | 20.239 | 14.374 |
| 131.5 | 32.895 | 37.307 | 35.964 | 31.374 | 25.313 | 28.722 | 24.446 | 20.256 | 14.476 |
| 132.0 | 32.776 | 37.230 | 35.802 | 31.263 | 25.237 | 28.637 | 24.438 | 20.273 | 14.586 |
| 132.5 | 32.649 | 37.035 | 35.649 | 31.144 | 25.160 | 28.543 | 24.446 | 20.332 | 14.688 |
| 133.0 | 32.538 | 36.916 | 35.564 | 31.042 | 25.135 | 28.416 | 24.438 | 20.383 | 14.748 |
| 133.5 | 32.453 | 36.788 | 35.386 | 30.889 | 25.075 | 28.297 | 24.463 | 20.400 | 14.799 |
| 134.0 | 32.377 | 36.652 | 35.241 | 30.813 | 24.999 | 28.237 | 24.463 | 20.426 | 14.926 |
| 134.5 | 32.224 | 36.482 | 35.122 | 30.643 | 24.956 | 28.127 | 24.438 | 20.434 | 15.011 |
| 135.0 | 32.113 | 36.338 | 34.927 | 30.524 | 24.871 | 28.016 | 24.421 | 20.434 | 15.071 |
| 135.5 | 31.969 | 36.176 | 34.799 | 30.405 | 24.820 | 27.940 | 24.438 | 20.460 | 15.224 |
| 136.0 | 31.884 | 36.023 | 34.672 | 30.277 | 24.735 | 27.846 | 24.463 | 20.451 | 15.258 |
| 136.5 | 31.722 | 35.828 | 34.434 | 30.150 | 24.701 | 27.770 | 24.421 | 20.468 | 15.334 |
| 137.0 | 31.629 | 35.675 | 34.289 | 30.022 | 24.608 | 27.668 | 24.446 | 20.502 | 15.445 |
| 137.5 | 31.510 | 35.556 | 34.085 | 29.920 | 24.548 | 27.566 | 24.429 | 20.451 | 15.555 |
| 138.0 | 31.289 | 35.352 | 33.847 | 29.716 | 24.472 | 27.472 | 24.370 | 20.477 | 15.615 |
| 138.5 | 31.212 | 35.173 | 33.635 | 29.623 | 24.370 | 27.396 | 24.387 | 20.451 | 15.683 |

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**CANDELA TABULATION - (Cont.)**

|       |        |        |        |        |        |        |        |        |        |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 139.0 | 31.085 | 34.995 | 33.422 | 29.453 | 24.336 | 27.311 | 24.361 | 20.434 | 15.768 |
| 139.5 | 30.932 | 34.833 | 33.184 | 29.351 | 24.200 | 27.200 | 24.370 | 20.485 | 15.853 |
| 140.0 | 30.813 | 34.621 | 32.912 | 29.206 | 24.149 | 27.090 | 24.327 | 20.485 | 15.989 |
| 140.5 | 30.651 | 34.476 | 32.742 | 29.036 | 24.064 | 26.996 | 24.217 | 20.451 | 16.040 |
| 141.0 | 30.549 | 34.332 | 32.411 | 28.917 | 23.996 | 26.894 | 24.183 | 20.485 | 16.082 |
| 141.5 | 30.413 | 34.187 | 32.224 | 28.773 | 23.911 | 26.809 | 24.123 | 20.511 | 16.210 |
| 142.0 | 30.243 | 33.941 | 31.943 | 28.611 | 23.843 | 26.699 | 24.013 | 20.485 | 16.201 |
| 142.5 | 30.141 | 33.771 | 31.671 | 28.458 | 23.766 | 26.588 | 23.928 | 20.545 | 16.320 |
| 143.0 | 29.980 | 33.567 | 31.476 | 28.305 | 23.673 | 26.461 | 23.851 | 20.545 | 16.380 |
| 143.5 | 29.878 | 33.312 | 31.229 | 28.135 | 23.571 | 26.282 | 23.775 | 20.545 | 16.482 |
| 144.0 | 29.750 | 33.065 | 30.966 | 28.033 | 23.435 | 26.172 | 23.622 | 20.596 | 16.567 |
| 144.5 | 29.657 | 32.802 | 30.711 | 27.863 | 23.350 | 26.070 | 23.511 | 20.613 | 16.626 |
| 145.0 | 29.410 | 32.462 | 30.490 | 27.693 | 23.248 | 25.942 | 23.401 | 20.604 | 16.694 |
| 145.5 | 29.172 | 32.190 | 30.192 | 27.489 | 23.120 | 25.772 | 23.248 | 20.638 | 16.771 |
| 146.0 | 28.968 | 31.867 | 29.946 | 27.353 | 23.052 | 25.628 | 23.137 | 20.647 | 16.864 |
| 146.5 | 28.696 | 31.544 | 29.674 | 27.149 | 22.950 | 25.500 | 22.967 | 20.664 | 16.949 |
| 147.0 | 28.407 | 31.246 | 29.402 | 27.022 | 22.882 | 25.364 | 22.823 | 20.647 | 16.983 |
| 147.5 | 28.186 | 30.898 | 29.147 | 26.835 | 22.755 | 25.211 | 22.653 | 20.604 | 17.085 |
| 148.0 | 27.906 | 30.558 | 28.917 | 26.673 | 22.678 | 25.058 | 22.466 | 20.511 | 17.179 |
| 148.5 | 27.557 | 30.243 | 28.645 | 26.512 | 22.542 | 24.897 | 22.279 | 20.477 | 17.230 |
| 149.0 | 27.285 | 29.852 | 28.416 | 26.376 | 22.440 | 24.752 | 22.126 | 20.400 | 17.289 |
| 149.5 | 26.996 | 29.538 | 28.203 | 26.121 | 22.313 | 24.608 | 21.922 | 20.307 | 17.255 |
| 150.0 | 26.631 | 29.249 | 27.872 | 25.968 | 22.211 | 24.455 | 21.684 | 20.222 | 17.298 |
| 150.5 | 26.376 | 28.994 | 27.693 | 25.798 | 22.109 | 24.310 | 21.556 | 20.154 | 17.213 |
| 151.0 | 26.002 | 28.696 | 27.455 | 25.619 | 21.990 | 24.149 | 21.344 | 20.026 | 17.238 |
| 151.5 | 25.721 | 28.424 | 27.217 | 25.424 | 21.896 | 23.945 | 21.182 | 19.933 | 17.187 |
| 152.0 | 25.551 | 28.135 | 26.954 | 25.220 | 21.718 | 23.826 | 21.029 | 19.848 | 17.162 |
| 152.5 | 25.271 | 27.846 | 26.716 | 25.024 | 21.641 | 23.630 | 20.902 | 19.737 | 17.111 |
| 153.0 | 25.058 | 27.574 | 26.444 | 24.786 | 21.514 | 23.409 | 20.749 | 19.610 | 17.077 |
| 153.5 | 24.854 | 27.336 | 26.231 | 24.616 | 21.378 | 23.171 | 20.647 | 19.525 | 16.992 |
| 154.0 | 24.591 | 27.005 | 25.993 | 24.370 | 21.233 | 22.976 | 20.477 | 19.423 | 16.975 |
| 154.5 | 24.387 | 26.733 | 25.704 | 24.072 | 21.089 | 22.695 | 20.324 | 19.287 | 16.847 |
| 155.0 | 24.140 | 26.452 | 25.475 | 23.868 | 20.902 | 22.449 | 20.247 | 19.185 | 16.796 |
| 155.5 | 23.885 | 26.172 | 25.254 | 23.630 | 20.715 | 22.143 | 20.120 | 19.100 | 16.771 |
| 156.0 | 23.656 | 25.900 | 24.965 | 23.358 | 20.519 | 21.888 | 20.001 | 18.955 | 16.720 |
| 156.5 | 23.486 | 25.653 | 24.744 | 23.112 | 20.273 | 21.624 | 19.950 | 18.887 | 16.643 |
| 157.0 | 23.239 | 25.364 | 24.497 | 22.840 | 20.035 | 21.361 | 19.848 | 18.768 | 16.609 |
| 157.5 | 22.950 | 25.135 | 24.242 | 22.559 | 19.839 | 21.038 | 19.712 | 18.692 | 16.524 |
| 158.0 | 22.814 | 24.888 | 24.030 | 22.330 | 19.593 | 20.757 | 19.601 | 18.675 | 16.558 |
| 158.5 | 22.619 | 24.608 | 23.783 | 22.058 | 19.363 | 20.494 | 19.482 | 18.624 | 16.482 |
| 159.0 | 22.389 | 24.344 | 23.486 | 21.777 | 19.142 | 20.162 | 19.295 | 18.590 | 16.448 |
| 159.5 | 22.228 | 24.081 | 23.222 | 21.480 | 18.887 | 19.873 | 19.159 | 18.590 | 16.473 |
| 160.0 | 22.032 | 23.792 | 23.010 | 21.225 | 18.624 | 19.610 | 18.972 | 18.505 | 16.473 |
| 160.5 | 21.777 | 23.537 | 22.729 | 21.004 | 18.394 | 19.338 | 18.853 | 18.496 | 16.490 |
| 161.0 | 21.599 | 23.248 | 22.432 | 20.774 | 18.131 | 19.100 | 18.709 | 18.496 | 16.575 |
| 161.5 | 21.369 | 22.967 | 22.228 | 20.494 | 17.944 | 18.887 | 18.513 | 18.394 | 16.652 |
| 162.0 | 21.131 | 22.687 | 21.930 | 20.230 | 17.723 | 18.683 | 18.403 | 18.360 | 16.652 |
| 162.5 | 20.970 | 22.423 | 21.692 | 20.001 | 17.536 | 18.488 | 18.258 | 18.241 | 16.737 |
| 163.0 | 20.749 | 22.109 | 21.463 | 19.788 | 17.383 | 18.352 | 18.097 | 18.071 | 16.728 |
| 163.5 | 20.494 | 21.828 | 21.140 | 19.550 | 17.221 | 18.156 | 17.935 | 17.918 | 16.652 |
| 164.0 | 20.290 | 21.522 | 20.868 | 19.355 | 17.051 | 18.003 | 17.825 | 17.757 | 16.584 |
| 164.5 | 20.077 | 21.191 | 20.638 | 19.159 | 16.932 | 17.799 | 17.655 | 17.527 | 16.448 |
| 165.0 | 19.788 | 20.936 | 20.332 | 18.862 | 16.805 | 17.604 | 17.527 | 17.374 | 16.312 |
| 165.5 | 19.610 | 20.587 | 20.077 | 18.666 | 16.635 | 17.434 | 17.417 | 17.213 | 16.201 |
| 166.0 | 19.346 | 20.264 | 19.848 | 18.394 | 16.533 | 17.281 | 17.213 | 16.992 | 16.057 |
| 166.5 | 19.074 | 19.975 | 19.499 | 18.182 | 16.371 | 17.068 | 17.128 | 16.822 | 15.870 |



**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : PNA-7511W.IES**

**CANDELA TABULATION - (Cont.)**

|              |        |        |        |        |        |        |        |        |        |
|--------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| <b>167.0</b> | 18.828 | 19.661 | 19.270 | 17.952 | 16.184 | 16.873 | 16.975 | 16.643 | 15.802 |
| <b>167.5</b> | 18.581 | 19.304 | 19.006 | 17.714 | 16.040 | 16.703 | 16.822 | 16.473 | 15.674 |
| <b>168.0</b> | 18.326 | 19.032 | 18.700 | 17.493 | 15.929 | 16.516 | 16.660 | 16.329 | 15.538 |
| <b>168.5</b> | 18.029 | 18.726 | 18.420 | 17.264 | 15.751 | 16.320 | 16.499 | 16.193 | 15.436 |
| <b>169.0</b> | 17.808 | 18.394 | 18.165 | 17.060 | 15.615 | 16.133 | 16.312 | 16.040 | 15.334 |
| <b>169.5</b> | 17.561 | 18.080 | 17.842 | 16.779 | 15.479 | 15.955 | 16.125 | 15.887 | 15.173 |
| <b>170.0</b> | 17.306 | 17.765 | 17.587 | 16.601 | 15.326 | 15.734 | 15.989 | 15.734 | 15.130 |
| <b>170.5</b> | 17.051 | 17.468 | 17.306 | 16.346 | 15.198 | 15.564 | 15.785 | 15.589 | 15.011 |
| <b>171.0</b> | 16.745 | 17.204 | 16.992 | 16.082 | 15.028 | 15.377 | 15.623 | 15.343 | 14.909 |
| <b>171.5</b> | 16.490 | 16.873 | 16.720 | 15.861 | 14.884 | 15.215 | 15.428 | 15.181 | 14.705 |
| <b>172.0</b> | 16.227 | 16.567 | 16.439 | 15.691 | 14.722 | 15.028 | 15.190 | 14.960 | 14.535 |
| <b>172.5</b> | 15.904 | 16.286 | 16.099 | 15.436 | 14.569 | 14.867 | 15.011 | 14.790 | 14.374 |
| <b>173.0</b> | 15.683 | 15.989 | 15.810 | 15.249 | 14.425 | 14.663 | 14.841 | 14.629 | 14.255 |
| <b>173.5</b> | 15.411 | 15.666 | 15.564 | 14.986 | 14.272 | 14.484 | 14.603 | 14.408 | 14.034 |
| <b>174.0</b> | 15.079 | 15.411 | 15.215 | 14.756 | 14.136 | 14.272 | 14.399 | 14.272 | 13.889 |
| <b>174.5</b> | 14.918 | 15.096 | 14.977 | 14.552 | 13.983 | 14.110 | 14.187 | 14.068 | 13.787 |
| <b>175.0</b> | 14.603 | 14.824 | 14.688 | 14.348 | 13.821 | 13.983 | 13.974 | 13.881 | 13.609 |
| <b>175.5</b> | 14.340 | 14.535 | 14.399 | 14.119 | 13.694 | 13.779 | 13.813 | 13.702 | 13.396 |
| <b>176.0</b> | 14.085 | 14.263 | 14.187 | 13.923 | 13.541 | 13.566 | 13.660 | 13.549 | 13.320 |
| <b>176.5</b> | 13.838 | 13.991 | 13.974 | 13.719 | 13.422 | 13.464 | 13.498 | 13.362 | 13.192 |
| <b>177.0</b> | 13.617 | 13.728 | 13.702 | 13.498 | 13.286 | 13.277 | 13.320 | 13.201 | 13.056 |
| <b>177.5</b> | 13.464 | 13.524 | 13.481 | 13.362 | 13.133 | 13.124 | 13.167 | 13.073 | 12.954 |
| <b>178.0</b> | 13.252 | 13.252 | 13.277 | 13.192 | 13.022 | 13.005 | 12.988 | 12.903 | 12.784 |
| <b>178.5</b> | 13.014 | 13.073 | 13.056 | 13.048 | 12.929 | 12.835 | 12.827 | 12.759 | 12.691 |
| <b>179.0</b> | 12.835 | 12.818 | 12.861 | 12.895 | 12.801 | 12.682 | 12.691 | 12.640 | 12.546 |
| <b>179.5</b> | 12.742 | 12.725 | 12.699 | 12.725 | 12.682 | 12.606 | 12.555 | 12.504 | 12.495 |
| <b>180.0</b> | 12.589 | 12.589 | 12.589 | 12.589 | 12.589 | 12.589 | 12.589 | 12.589 | 12.589 |

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : PNA-7511W.IES**

**ZONAL LUMEN SUMMARY**

| Zone    | Lumens | %Lamp | %Fixt  |
|---------|--------|-------|--------|
| 0-20    | 1.09   | N.A.  | 0.40   |
| 0-30    | 4.78   | N.A.  | 1.70   |
| 0-40    | 12.40  | N.A.  | 4.30   |
| 0-60    | 41.90  | N.A.  | 14.60  |
| 0-80    | 89.51  | N.A.  | 31.20  |
| 0-90    | 117.69 | N.A.  | 41.00  |
| 10-90   | 117.64 | N.A.  | 41.00  |
| 20-40   | 11.30  | N.A.  | 3.90   |
| 20-50   | 23.59  | N.A.  | 8.20   |
| 40-70   | 51.38  | N.A.  | 17.90  |
| 60-80   | 47.61  | N.A.  | 16.60  |
| 70-80   | 25.73  | N.A.  | 9.00   |
| 80-90   | 28.18  | N.A.  | 9.80   |
| 90-110  | 59.70  | N.A.  | 20.80  |
| 90-120  | 88.63  | N.A.  | 30.90  |
| 90-130  | 114.62 | N.A.  | 39.90  |
| 90-150  | 152.45 | N.A.  | 53.10  |
| 90-180  | 169.55 | N.A.  | 59.00  |
| 110-180 | 109.86 | N.A.  | 38.20  |
| 0-180   | 287.24 | N.A.  | 100.00 |

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

| Zone    | Lumens |
|---------|--------|
| 0-10    | 0.05   |
| 10-20   | 1.04   |
| 20-30   | 3.69   |
| 30-40   | 7.62   |
| 40-50   | 12.28  |
| 50-60   | 17.22  |
| 60-70   | 21.88  |
| 70-80   | 25.73  |
| 80-90   | 28.18  |
| 90-100  | 29.55  |
| 100-110 | 30.14  |
| 110-120 | 28.94  |
| 120-130 | 25.99  |
| 130-140 | 21.60  |
| 140-150 | 16.23  |
| 150-160 | 10.40  |
| 160-170 | 5.28   |
| 170-180 | 1.43   |

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : PNA-7511W.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 |    |
| 0  | 105 | 105 | 105 | 105 | 96 | 96 | 96 | 96 | 78 | 78 | 78 | 62 | 62 | 62 | 48 | 48 | 48 | 41 |
| 1  | 91  | 84  | 79  | 73  | 82 | 76 | 71 | 67 | 61 | 57 | 54 | 47 | 44 | 42 | 34 | 32 | 30 | 24 |
| 2  | 81  | 71  | 63  | 56  | 72 | 64 | 57 | 51 | 51 | 45 | 41 | 39 | 35 | 31 | 27 | 24 | 22 | 16 |
| 3  | 72  | 61  | 52  | 44  | 65 | 55 | 47 | 40 | 43 | 37 | 32 | 33 | 28 | 24 | 23 | 19 | 17 | 12 |
| 4  | 66  | 53  | 43  | 36  | 59 | 47 | 39 | 33 | 37 | 31 | 26 | 28 | 23 | 19 | 19 | 16 | 13 | 9  |
| 5  | 60  | 46  | 37  | 30  | 53 | 42 | 33 | 27 | 33 | 26 | 21 | 25 | 20 | 16 | 17 | 13 | 10 | 7  |
| 6  | 55  | 41  | 32  | 25  | 49 | 37 | 29 | 23 | 29 | 23 | 18 | 22 | 17 | 13 | 15 | 11 | 9  | 5  |
| 7  | 50  | 36  | 28  | 21  | 45 | 33 | 25 | 19 | 26 | 20 | 15 | 20 | 15 | 11 | 13 | 10 | 7  | 4  |
| 8  | 46  | 33  | 24  | 18  | 41 | 30 | 22 | 17 | 23 | 17 | 13 | 18 | 13 | 10 | 12 | 9  | 6  | 3  |
| 9  | 43  | 30  | 22  | 16  | 38 | 27 | 19 | 14 | 21 | 15 | 11 | 16 | 12 | 8  | 11 | 8  | 5  | 3  |
| 10 | 40  | 27  | 19  | 14  | 36 | 24 | 17 | 13 | 19 | 14 | 10 | 15 | 10 | 7  | 10 | 7  | 5  | 2  |

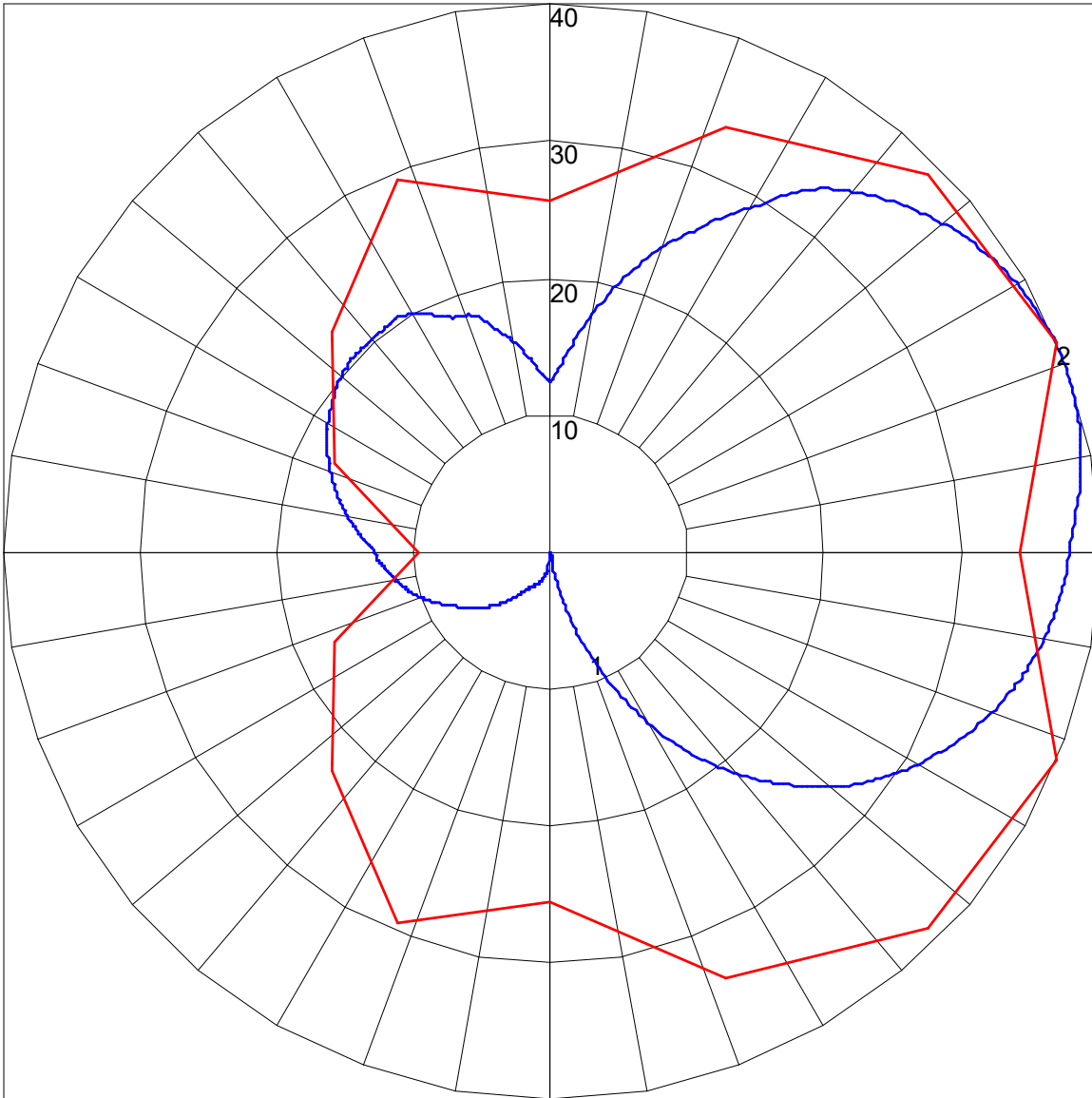
**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : PNA-7511W.IES**

**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 | 10.5                 | 11.4 | 11.5 | 12.5 | 13.8 | 8.6                | 9.5  | 9.6  | 10.6 | 11.9 |
|                | 3H   | 13.6                 | 14.5 | 14.6 | 15.5 | 16.9 | 11.7               | 12.5 | 12.7 | 13.6 | 15.0 |
|                | 4H   | 15.1                 | 15.9 | 16.1 | 17.0 | 18.4 | 13.2               | 14.0 | 14.2 | 15.0 | 16.4 |
|                | 6H   | 16.6                 | 17.4 | 17.6 | 18.4 | 19.8 | 14.6               | 15.4 | 15.7 | 16.5 | 17.9 |
|                | 8H   | 17.3                 | 18.0 | 18.3 | 19.1 | 20.5 | 15.3               | 16.1 | 16.4 | 17.1 | 18.6 |
|                | 12H  | 18.0                 | 18.7 | 19.0 | 19.8 | 21.2 | 16.0               | 16.7 | 17.1 | 17.8 | 19.2 |
| 4H             | 2H   | 11.4                 | 12.2 | 12.4 | 13.2 | 14.7 | 9.5                | 10.4 | 10.6 | 11.4 | 12.8 |
|                | 3H   | 14.7                 | 15.5 | 15.8 | 16.5 | 17.9 | 12.9               | 13.6 | 13.9 | 14.7 | 16.1 |
|                | 4H   | 16.4                 | 17.1 | 17.5 | 18.2 | 19.6 | 14.6               | 15.3 | 15.6 | 16.3 | 17.8 |
|                | 6H   | 18.1                 | 18.7 | 19.1 | 19.8 | 21.2 | 16.2               | 16.8 | 17.3 | 17.9 | 19.3 |
|                | 8H   | 18.9                 | 19.5 | 20.0 | 20.5 | 22.0 | 17.0               | 17.6 | 18.1 | 18.7 | 20.1 |
|                | 12H  | 19.7                 | 20.2 | 20.7 | 21.3 | 22.7 | 17.8               | 18.3 | 18.8 | 19.4 | 20.8 |
| 8H             | 4H   | 17.1                 | 17.6 | 18.1 | 18.7 | 20.1 | 15.2               | 15.8 | 16.3 | 16.9 | 18.3 |
|                | 6H   | 19.0                 | 19.5 | 20.0 | 20.6 | 22.0 | 17.2               | 17.6 | 18.2 | 18.7 | 20.2 |
|                | 8H   | 19.9                 | 20.4 | 21.0 | 21.5 | 22.9 | 18.1               | 18.5 | 19.2 | 19.6 | 21.1 |
|                | 12H  | 20.9                 | 21.3 | 22.0 | 22.4 | 23.9 | 19.1               | 19.5 | 20.1 | 20.6 | 22.1 |
| 12H            | 4H   | 17.2                 | 17.7 | 18.2 | 18.8 | 20.2 | 15.4               | 15.9 | 16.4 | 17.0 | 18.4 |
|                | 6H   | 19.2                 | 19.6 | 20.2 | 20.7 | 22.2 | 17.4               | 17.8 | 18.4 | 18.9 | 20.4 |
|                | 8H   | 20.2                 | 20.6 | 21.3 | 21.7 | 23.2 | 18.4               | 18.8 | 19.5 | 19.9 | 21.4 |

Maximum UGR = 23.9

POLAR GRAPH



Maximum Candela = 40.358 Located At Horizontal Angle = 22.5, Vertical Angle = 109.5  
# 1 - Vertical Plane Through Horizontal Angles (22.5 - 202.5) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (109.5) (Through Max. Cd.)