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## Nata

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|                            |                      |
|----------------------------|----------------------|
| LumCAT: 3-1938-M           |                      |
| Luminaire: BJB 47.319.2021 |                      |
| Report No: GC2017062001    | Voltage(V): 218.3000 |
| Test No: NT-0010           | Current(A): 0.1030   |
| LampCAT: CITIZEN CLU036    | Power (W): 20.4000   |
| Lamp flux(lm): 2279.0      | PF: 0.9070           |
| Number of Lamps: 1         | Ballast type: DC     |
| Length(mm): 78             | Width(mm): 78        |
| Phm Type: C                | Height(mm): 0        |

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## Photometric Results

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Lumens(lm): 2063.81  
Efficiency(%): 90.56%  
Lumens(lm)/Power(W): 101.17  
Central intensity(cd): 8817.146  
Maximum intensity(cd): 8817.146  
Angle of maximum intensity: C=0.0  $\gamma$ =0.0  
Beam Angle(50%Imax): [C0/180]Total=16.4  
[C90/270]Total=16.4  
Field angle(10%Imax): [C0/180]Total=59.8  
[C90/270]Total=59.8  
Maximum s/h(1/2): C0\_180=0.28 C90\_270=0.28  
Maximum s/h(1/4): C0\_180=0.37 C90\_270=0.37  
Up flux rate of lamp(%): 0.00%  
Down flux rate of lamp(%): 90.56%  
Up flux rate of LUM(%): - -  
Down flux rate of LUM(%): 100.00%  
CIE Type : Direct lighting  
Output flux ratio in  $\pi$  solid angle : 98.760%

| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 0.0                | 8817.145      | 0.000       | 0         | .000%       | .000%      |
| 1.0                | 8741.924      | 8.402       | 8.402     | .369%       | .407%      |
| 2.0                | 8487.495      | 24.729      | 33.131    | 1.085%      | 1.605%     |
| 3.0                | 8029.494      | 39.503      | 72.634    | 1.733%      | 3.519%     |
| 4.0                | 7457.596      | 51.840      | 124.474   | 2.275%      | 6.031%     |
| 5.0                | 6723.006      | 61.004      | 185.479   | 2.677%      | 8.987%     |
| 6.0                | 5985.181      | 66.785      | 252.264   | 2.930%      | 12.223%    |
| 7.0                | 5205.927      | 69.463      | 321.727   | 3.048%      | 15.589%    |
| 8.0                | 4545.663      | 69.790      | 391.517   | 3.062%      | 18.971%    |
| 9.0                | 3930.063      | 68.691      | 460.208   | 3.014%      | 22.299%    |
| 10.0               | 3480.941      | 67.067      | 527.275   | 2.943%      | 25.549%    |
| 11.0               | 3162.302      | 66.380      | 593.655   | 2.913%      | 28.765%    |
| 12.0               | 2912.896      | 66.411      | 660.065   | 2.914%      | 31.983%    |
| 13.0               | 2720.474      | 66.854      | 726.919   | 2.933%      | 35.222%    |
| 14.0               | 2557.714      | 67.560      | 794.479   | 2.964%      | 38.496%    |
| 15.0               | 2418.352      | 68.314      | 862.793   | 2.998%      | 41.806%    |
| 16.0               | 2280.092      | 68.845      | 931.638   | 3.021%      | 45.142%    |
| 17.0               | 2153.187      | 69.038      | 1000.676  | 3.029%      | 48.487%    |
| 18.0               | 2018.092      | 68.775      | 1069.452  | 3.018%      | 51.819%    |
| 19.0               | 1899.308      | 68.155      | 1137.607  | 2.991%      | 55.122%    |
| 20.0               | 1776.601      | 67.279      | 1204.886  | 2.952%      | 58.382%    |
| 21.0               | 1658.574      | 65.962      | 1270.848  | 2.894%      | 61.578%    |
| 22.0               | 1554.242      | 64.563      | 1335.411  | 2.833%      | 64.706%    |
| 23.0               | 1455.622      | 63.155      | 1398.566  | 2.771%      | 67.766%    |
| 24.0               | 1355.557      | 61.462      | 1460.029  | 2.697%      | 70.744%    |
| 25.0               | 1267.508      | 59.643      | 1519.672  | 2.617%      | 73.634%    |
| 26.0               | 1194.077      | 58.106      | 1577.778  | 2.550%      | 76.450%    |
| 27.0               | 1106.014      | 56.272      | 1634.05   | 2.469%      | 79.176%    |
| 28.0               | 1038.185      | 54.287      | 1688.336  | 2.382%      | 81.807%    |
| 29.0               | 958.436       | 52.237      | 1740.574  | 2.292%      | 84.338%    |
| 30.0               | 871.336       | 49.403      | 1789.977  | 2.168%      | 86.731%    |
| 31.0               | 773.384       | 45.770      | 1835.747  | 2.008%      | 88.949%    |
| 32.0               | 663.643       | 41.169      | 1876.916  | 1.806%      | 90.944%    |
| 33.0               | 551.080       | 35.786      | 1912.703  | 1.570%      | 92.678%    |
| 34.0               | 441.401       | 30.035      | 1942.738  | 1.318%      | 94.133%    |
| 35.0               | 339.519       | 24.252      | 1966.99   | 1.064%      | 95.309%    |
| 36.0               | 247.747       | 18.699      | 1985.689  | .820%       | 96.215%    |
| 37.0               | 162.327       | 13.374      | 1999.063  | .587%       | 96.863%    |

| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 38.0               | 102.529       | 8.841       | 2007.904  | .388%       | 97.291%    |
| 39.0               | 59.826        | 5.542       | 2013.446  | .243%       | 97.559%    |
| 40.0               | 39.262        | 3.456       | 2016.901  | .152%       | 97.727%    |
| 41.0               | 28.003        | 2.395       | 2019.297  | .105%       | 97.843%    |
| 42.0               | 22.725        | 1.843       | 2021.14   | .081%       | 97.932%    |
| 43.0               | 19.566        | 1.567       | 2022.706  | .069%       | 98.008%    |
| 44.0               | 17.026        | 1.381       | 2024.087  | .061%       | 98.075%    |
| 45.0               | 14.755        | 1.221       | 2025.309  | .054%       | 98.134%    |
| 46.0               | 13.227        | 1.094       | 2026.403  | .048%       | 98.187%    |
| 47.0               | 11.961        | 1.002       | 2027.405  | .044%       | 98.236%    |
| 48.0               | 11.011        | 0.929       | 2028.333  | .041%       | 98.281%    |
| 49.0               | 10.454        | 0.881       | 2029.215  | .039%       | 98.324%    |
| 50.0               | 10.013        | 0.853       | 2030.068  | .037%       | 98.365%    |
| 51.0               | 9.745         | 0.836       | 2030.904  | .037%       | 98.405%    |
| 52.0               | 9.504         | 0.826       | 2031.73   | .036%       | 98.445%    |
| 53.0               | 9.318         | 0.819       | 2032.549  | .036%       | 98.485%    |
| 54.0               | 9.153         | 0.814       | 2033.363  | .036%       | 98.525%    |
| 55.0               | 9.015         | 0.811       | 2034.174  | .036%       | 98.564%    |
| 56.0               | 8.892         | 0.809       | 2034.983  | .036%       | 98.603%    |
| 57.0               | 8.775         | 0.808       | 2035.791  | .035%       | 98.642%    |
| 58.0               | 8.699         | 0.808       | 2036.599  | .035%       | 98.681%    |
| 59.0               | 8.609         | 0.809       | 2037.408  | .036%       | 98.721%    |
| 60.0               | 8.527         | 0.810       | 2038.218  | .036%       | 98.760%    |
| 61.0               | 8.465         | 0.811       | 2039.029  | .036%       | 98.799%    |
| 62.0               | 8.403         | 0.813       | 2039.842  | .036%       | 98.838%    |
| 63.0               | 8.355         | 0.815       | 2040.657  | .036%       | 98.878%    |
| 64.0               | 8.314         | 0.818       | 2041.474  | .036%       | 98.918%    |
| 65.0               | 8.286         | 0.821       | 2042.296  | .036%       | 98.957%    |
| 66.0               | 8.258         | 0.825       | 2043.121  | .036%       | 98.997%    |
| 67.0               | 8.224         | 0.829       | 2043.95   | .036%       | 99.038%    |
| 68.0               | 8.197         | 0.832       | 2044.782  | .036%       | 99.078%    |
| 69.0               | 8.183         | 0.836       | 2045.618  | .037%       | 99.118%    |
| 70.0               | 8.169         | 0.840       | 2046.457  | .037%       | 99.159%    |
| 71.0               | 8.155         | 0.844       | 2047.301  | .037%       | 99.200%    |
| 72.0               | 8.141         | 0.847       | 2048.149  | .037%       | 99.241%    |
| 73.0               | 8.114         | 0.850       | 2048.999  | .037%       | 99.282%    |
| 74.0               | 8.107         | 0.853       | 2049.851  | .037%       | 99.323%    |
| 75.0               | 8.093         | 0.856       | 2050.707  | .038%       | 99.365%    |

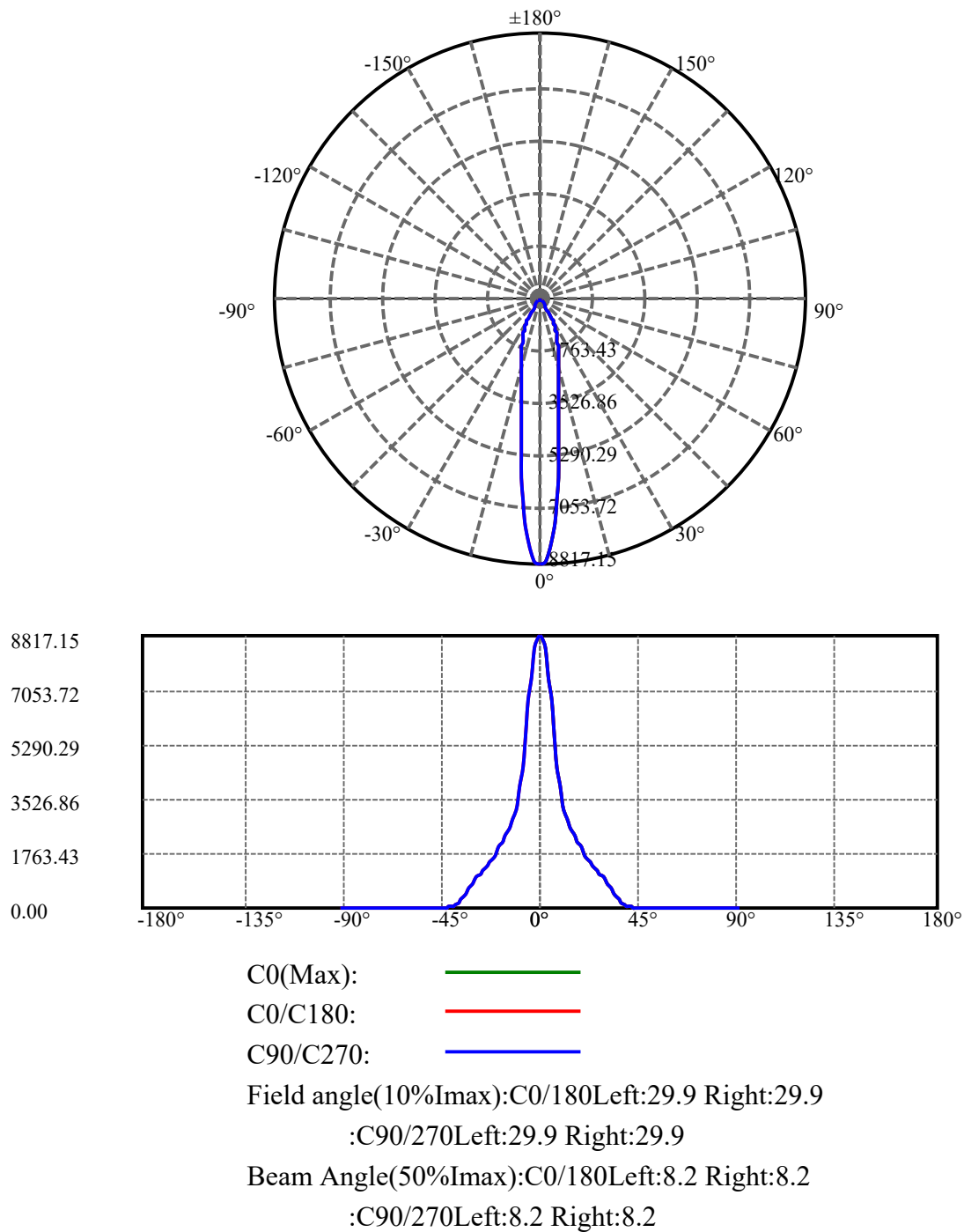
| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 76.0               | 8.100         | 0.860       | 2051.567  | .038%       | 99.407%    |
| 77.0               | 8.093         | 0.863       | 2052.43   | .038%       | 99.448%    |
| 78.0               | 8.073         | 0.865       | 2053.296  | .038%       | 99.490%    |
| 79.0               | 8.066         | 0.867       | 2054.163  | .038%       | 99.532%    |
| 80.0               | 8.080         | 0.870       | 2055.033  | .038%       | 99.575%    |
| 81.0               | 8.073         | 0.873       | 2055.907  | .038%       | 99.617%    |
| 82.0               | 8.066         | 0.875       | 2056.782  | .038%       | 99.659%    |
| 83.0               | 8.052         | 0.876       | 2057.658  | .038%       | 99.702%    |
| 84.0               | 8.073         | 0.878       | 2058.536  | .039%       | 99.744%    |
| 85.0               | 8.086         | 0.882       | 2059.418  | .039%       | 99.787%    |
| 86.0               | 8.031         | 0.881       | 2060.299  | .039%       | 99.830%    |
| 87.0               | 8.024         | 0.879       | 2061.178  | .039%       | 99.872%    |
| 88.0               | 8.018         | 0.879       | 2062.057  | .039%       | 99.915%    |
| 89.0               | 8.018         | 0.879       | 2062.936  | .039%       | 99.957%    |
| 90.0               | 8.004         | 0.878       | 2063.814  | .039%       | 100.000%   |

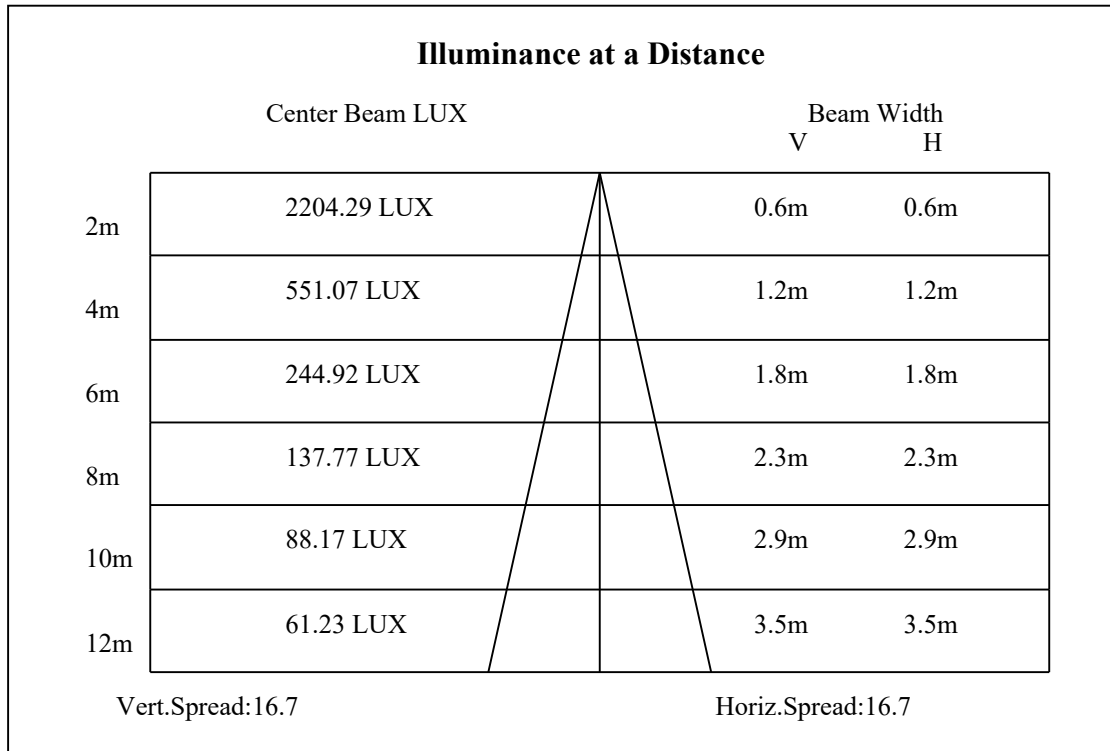
## ZONAL LUMEN SUMMARY

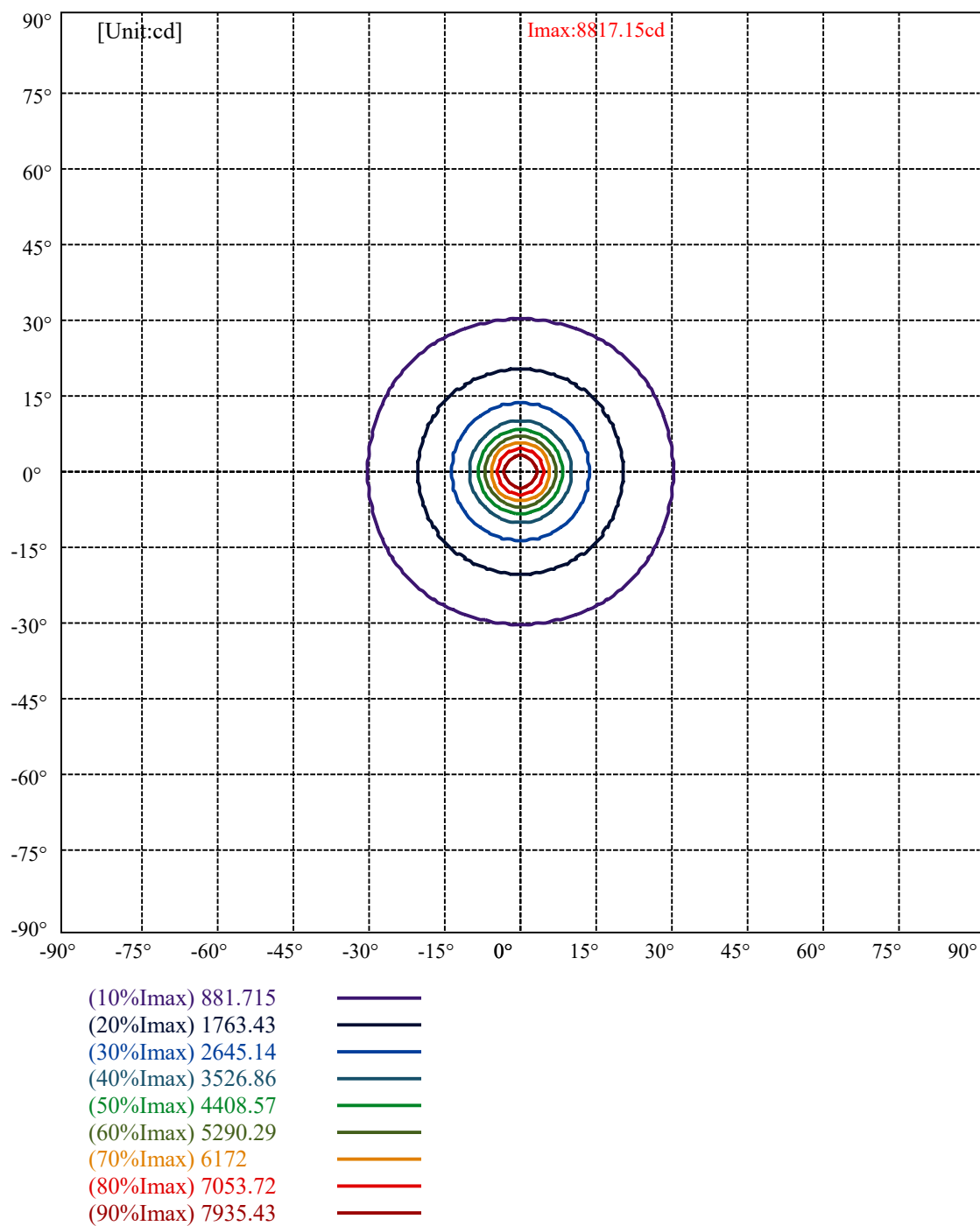
| Zone    | Lumens  | %Lamp  | %Fixt   |
|---------|---------|--------|---------|
| 0-30    | 1789.98 | 78.54% | 86.73%  |
| 0-40    | 2016.90 | 88.50% | 97.73%  |
| 0-60    | 2038.22 | 89.43% | 98.76%  |
| 0-90    | 2062.94 | 90.52% | 99.96%  |
| 0-120   | 2062.94 | 90.52% | 99.96%  |
| 0-180   | 2063.81 | 90.56% | 100.00% |
| 60-90   | 25.53   | 1.12%  | 1.24%   |
| 90-120  | 0.00    | 0.00%  | 0.00%   |
| 90-130  | 0.00    | 0.00%  | 0.00%   |
| 90-150  | 0.00    | 0.00%  | 0.00%   |
| 90-180  | 0.00    | 0.00%  | 0.00%   |
| 0-27.31 | 1651.05 | 72.45% | 80.00%  |

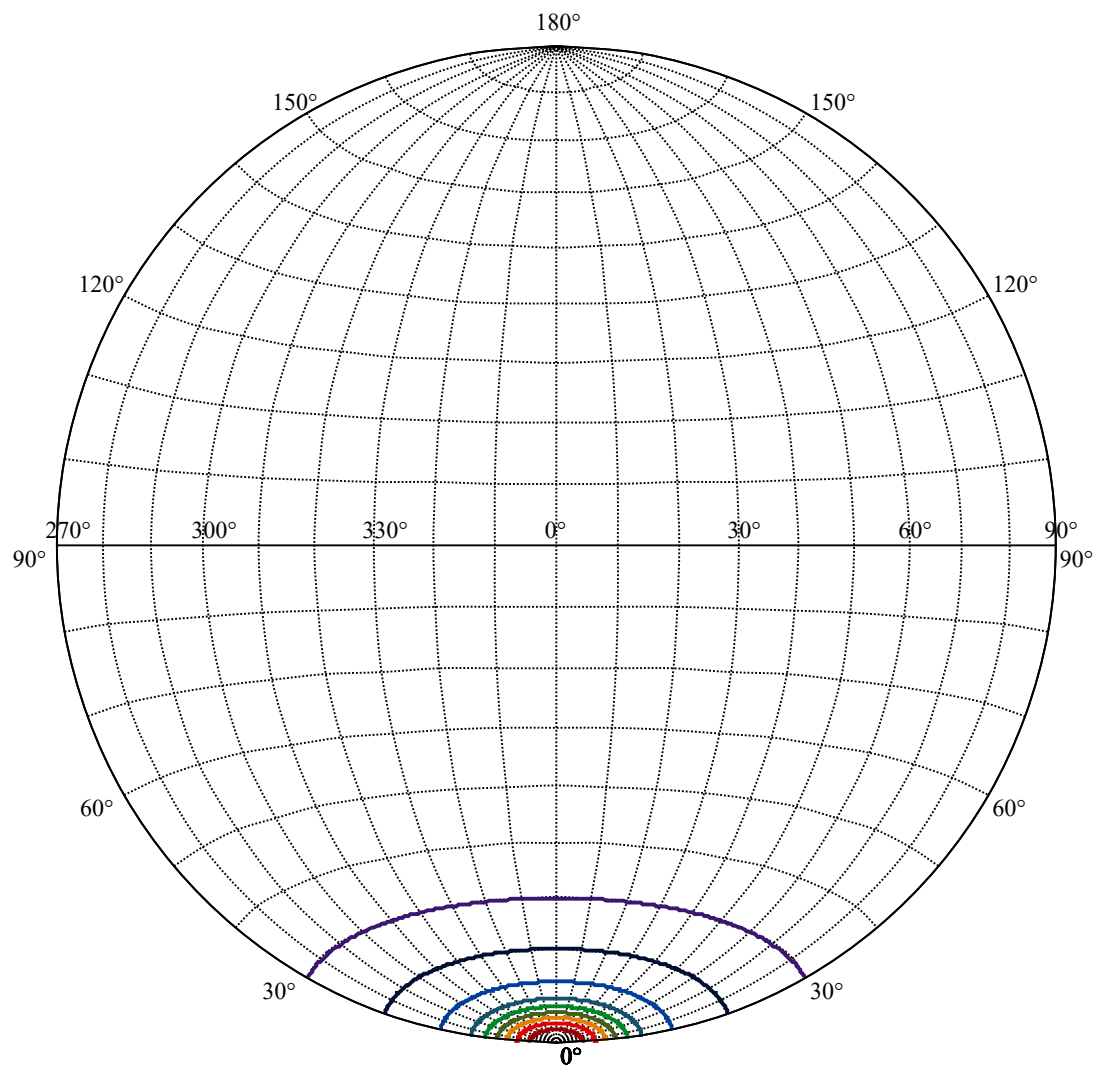
## ZONAL LUMEN SUMMARY

|         |        |
|---------|--------|
| 0-10    | 527.27 |
| 10-20   | 677.61 |
| 20-30   | 585.09 |
| 30-40   | 226.92 |
| 40-50   | 13.17  |
| 50-60   | 8.15   |
| 60-70   | 8.24   |
| 70-80   | 8.58   |
| 80-90   | 7.90   |
| 90-100  | 0.00   |
| 100-110 | 0.00   |
| 110-120 | 0.00   |
| 120-130 | 0.00   |
| 130-140 | 0.00   |
| 140-150 | 0.00   |
| 150-160 | 0.00   |
| 160-170 | 0.00   |
| 170-180 | 0.00   |









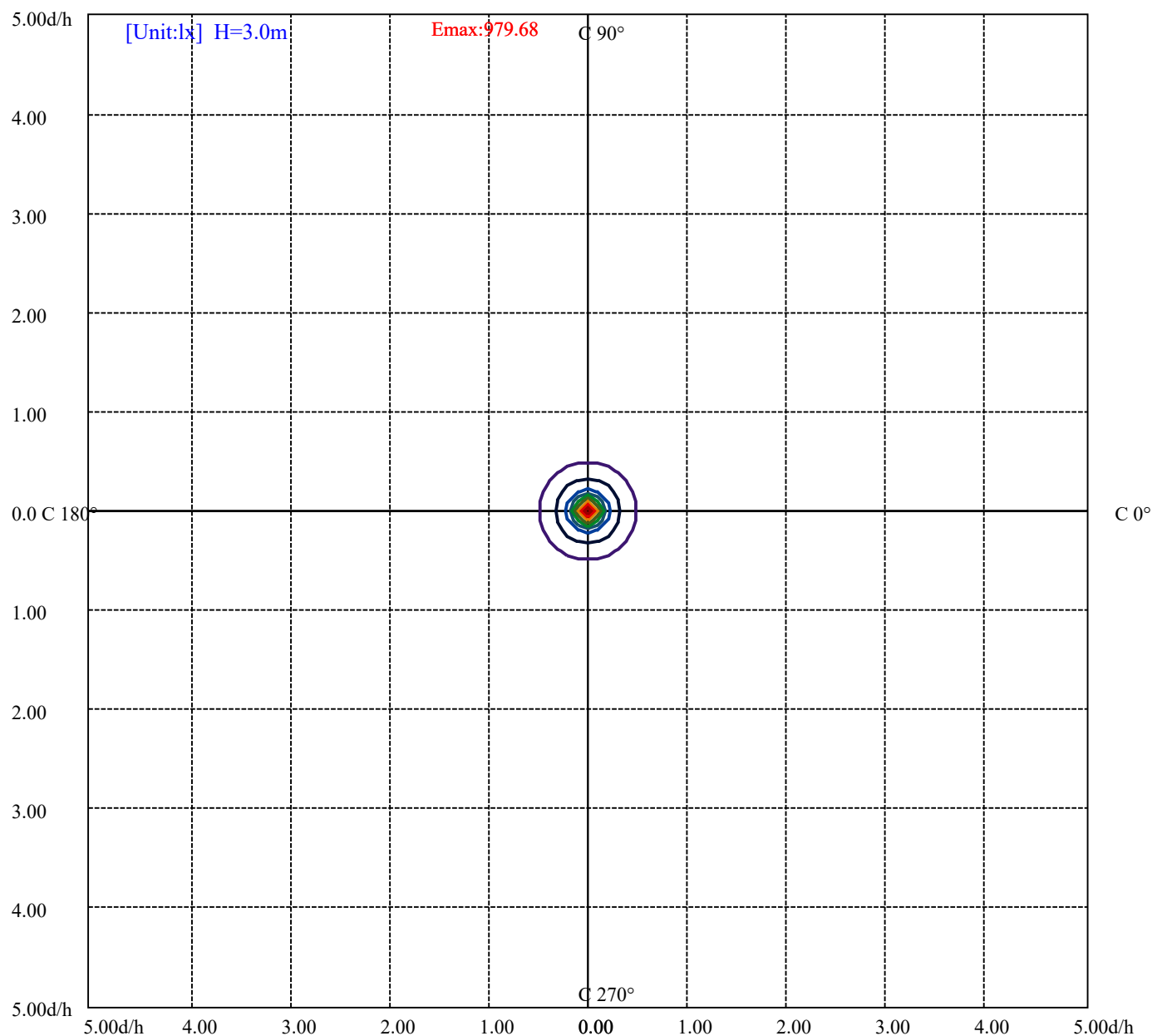
House

[Unit:cd]

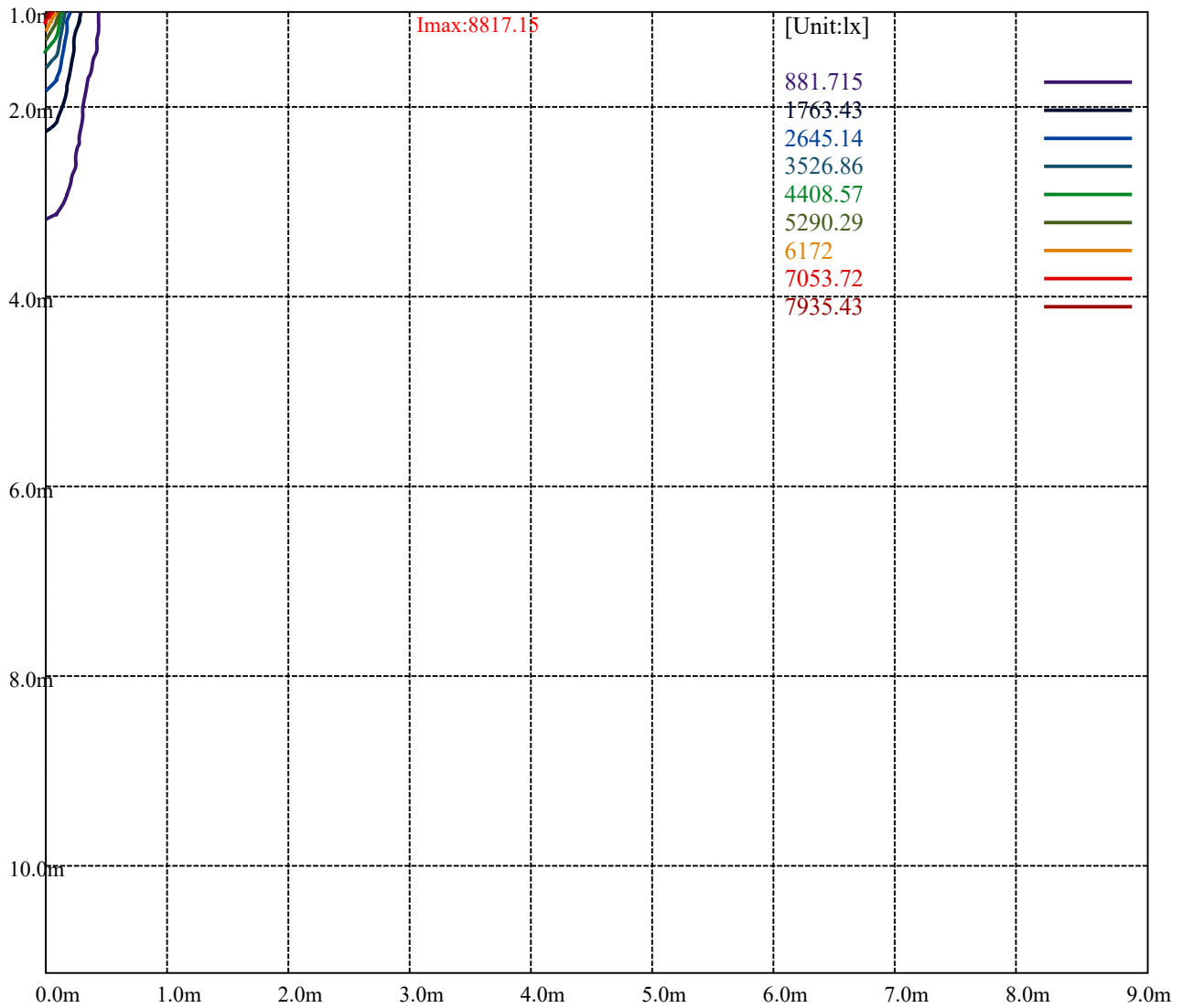
Road

Imax:8817.15

|           |         |   |
|-----------|---------|---|
| (10%Imax) | 881.715 | — |
| (20%Imax) | 1763.43 | — |
| (30%Imax) | 2645.14 | — |
| (40%Imax) | 3526.86 | — |
| (50%Imax) | 4408.57 | — |
| (60%Imax) | 5290.29 | — |
| (70%Imax) | 6172    | — |
| (80%Imax) | 7053.72 | — |
| (90%Imax) | 7935.43 | — |



|           |          |   |
|-----------|----------|---|
| (10%Emax) | 97.96811 | — |
| (20%Emax) | 195.9367 | — |
| (30%Emax) | 293.9044 | — |
| (40%Emax) | 391.8722 | — |
| (50%Emax) | 489.8411 | — |
| (60%Emax) | 587.8088 | — |
| (70%Emax) | 685.7767 | — |
| (80%Emax) | 783.7455 | — |
| (90%Emax) | 881.7133 | — |



Luminance Table

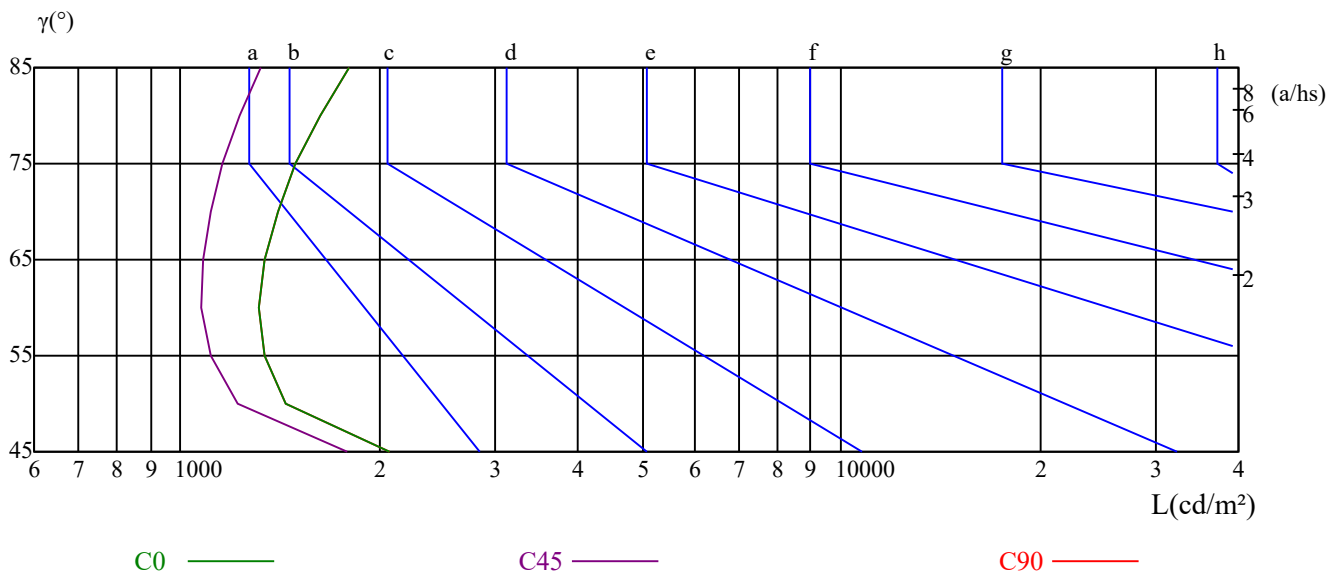
| $\gamma$ | 45   | 50   | 55   | 60   | 65   | 70   | 75   | 80   | 85   |
|----------|------|------|------|------|------|------|------|------|------|
| C0       | 2074 | 1439 | 1336 | 1314 | 1342 | 1404 | 1494 | 1624 | 1800 |
| C45      | 1782 | 1218 | 1113 | 1077 | 1080 | 1109 | 1155 | 1225 | 1318 |
| C90      | 2074 | 1439 | 1336 | 1314 | 1342 | 1404 | 1494 | 1624 | 1800 |

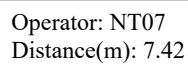
| L(Hor)(65) | L(Ver)(65) | L45(65) | L(Hor)(75) | L(Ver)(75) | L45(75) | L(Hor)(85) | L(Ver)(85) | L45(85) |
|------------|------------|---------|------------|------------|---------|------------|------------|---------|
| 3223       | 3223       | 3223    | 5140       | 5140       | 5140    | 15250      | 15250      | 15250   |

Glare Table

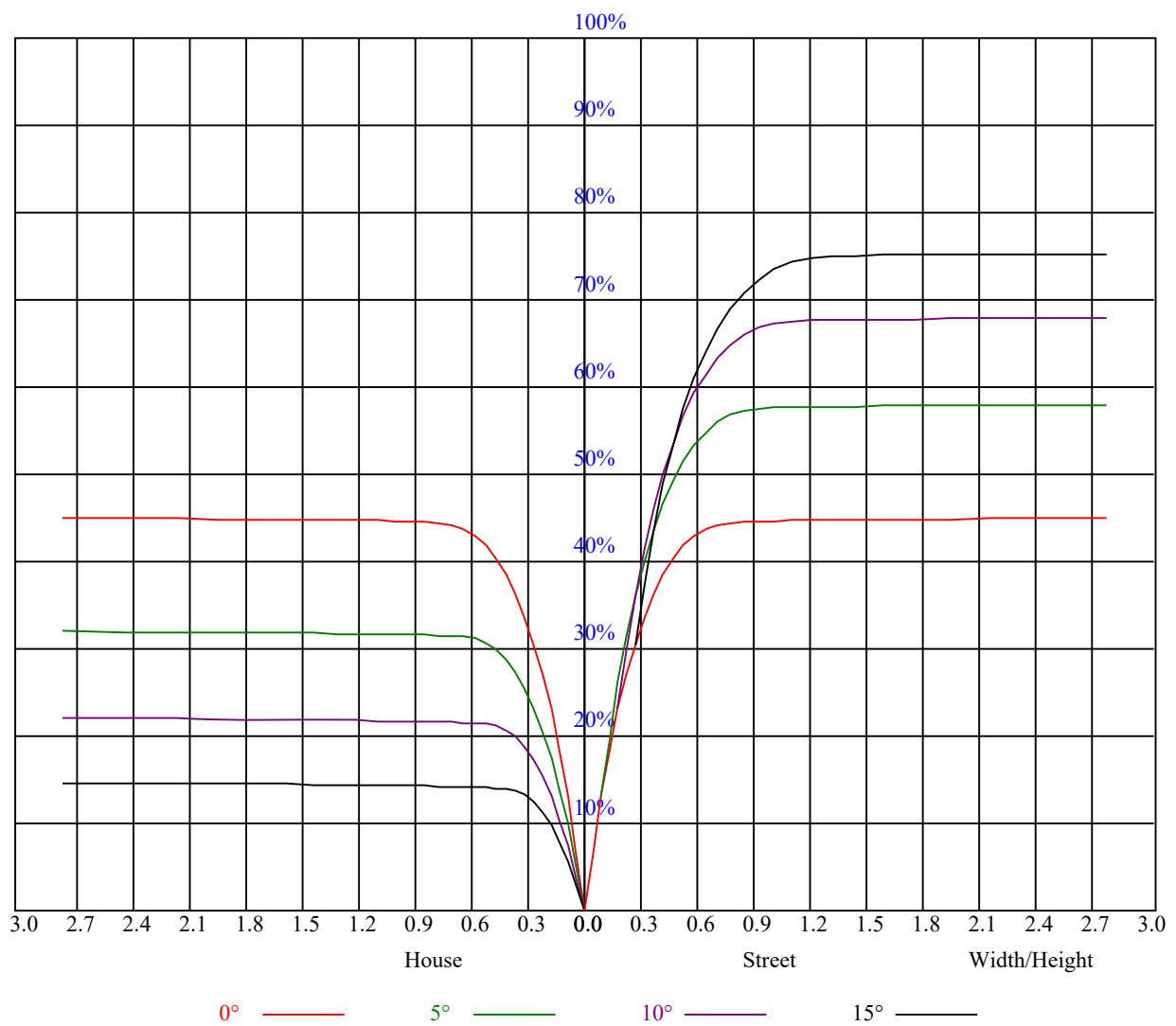
| Glare | Quality | Service Values Illuminance(lx) |      |      |            |            |            |            |            |
|-------|---------|--------------------------------|------|------|------------|------------|------------|------------|------------|
| 1.15  | A       | 2000                           | 1000 | 500  | $\leq 300$ |            |            |            |            |
| 1.5   | B       |                                | 2000 | 1000 | 500        | $\leq 300$ |            |            |            |
| 1.85  | C       |                                |      | 2000 | 1000       | 500        | $\leq 300$ |            |            |
| 2.2   | D       |                                |      |      | 2000       | 1000       | 500        | $\leq 300$ |            |
| 2.55  | E       |                                |      |      |            | 2000       | 1000       | 500        | $\leq 300$ |
|       |         | a                              | b    | c    | d          | e          | f          | g          | h          |

Luminance Limiting Curve





| RHOC | 80                                     |      |      | 70   |      |      | 50   |      |      | 30   |      |      | 10   |      |      | 0    |
|------|----------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| RHOW | 50                                     | 30   | 10   | 50   | 30   | 10   | 50   | 30   | 10   | 50   | 30   | 10   | 50   | 30   | 10   | 0    |
| RCR  | COEFFICIENTS OF UTILIZATION RHOF=20 CU |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 0    | 1.08                                   | 1.08 | 1.08 | 1.05 | 1.05 | 1.05 | 1.01 | 1.01 | 1.01 | 0.96 | 0.96 | 0.96 | 0.92 | 0.92 | 0.92 | 0.91 |
| 1    | 1.01                                   | 0.99 | 0.97 | 0.99 | 0.97 | 0.96 | 0.96 | 0.94 | 0.93 | 0.92 | 0.91 | 0.90 | 0.89 | 0.88 | 0.88 | 0.86 |
| 2    | 0.95                                   | 0.92 | 0.90 | 0.94 | 0.91 | 0.89 | 0.91 | 0.89 | 0.87 | 0.88 | 0.87 | 0.85 | 0.86 | 0.84 | 0.83 | 0.82 |
| 3    | 0.90                                   | 0.87 | 0.84 | 0.89 | 0.86 | 0.83 | 0.87 | 0.84 | 0.82 | 0.85 | 0.82 | 0.80 | 0.83 | 0.81 | 0.79 | 0.78 |
| 4    | 0.86                                   | 0.82 | 0.78 | 0.85 | 0.81 | 0.78 | 0.83 | 0.80 | 0.77 | 0.81 | 0.79 | 0.76 | 0.80 | 0.77 | 0.75 | 0.74 |
| 5    | 0.82                                   | 0.77 | 0.74 | 0.81 | 0.77 | 0.74 | 0.80 | 0.76 | 0.73 | 0.78 | 0.75 | 0.73 | 0.77 | 0.74 | 0.72 | 0.71 |
| 6    | 0.78                                   | 0.74 | 0.71 | 0.78 | 0.73 | 0.70 | 0.76 | 0.73 | 0.70 | 0.75 | 0.72 | 0.69 | 0.74 | 0.71 | 0.69 | 0.68 |
| 7    | 0.75                                   | 0.70 | 0.67 | 0.74 | 0.70 | 0.67 | 0.73 | 0.69 | 0.67 | 0.72 | 0.69 | 0.66 | 0.71 | 0.68 | 0.66 | 0.65 |
| 8    | 0.72                                   | 0.67 | 0.64 | 0.71 | 0.67 | 0.64 | 0.70 | 0.67 | 0.64 | 0.70 | 0.66 | 0.64 | 0.69 | 0.66 | 0.63 | 0.62 |
| 9    | 0.69                                   | 0.65 | 0.62 | 0.69 | 0.64 | 0.62 | 0.68 | 0.64 | 0.61 | 0.67 | 0.64 | 0.61 | 0.66 | 0.63 | 0.61 | 0.60 |
| 10   | 0.66                                   | 0.62 | 0.59 | 0.66 | 0.62 | 0.59 | 0.65 | 0.62 | 0.59 | 0.65 | 0.61 | 0.59 | 0.64 | 0.61 | 0.59 | 0.58 |



## Intensity data(cd)

| C/γ(°) | 0.0     | 1.0     | 2.0     | 3.0     | 4.0     | 5.0     | 6.0     | 7.0     | 8.0     |
|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0.0    | 8932.90 | 9058.43 | 9074.95 | 8978.60 | 8702.77 | 8096.04 | 7403.98 | 6603.46 | 5768.81 |
| 45.0   | 8569.53 | 8863.53 | 8996.77 | 8993.46 | 8896.01 | 8493.55 | 7987.58 | 7291.67 | 6377.18 |
| 90.0   | 8832.15 | 8848.11 | 8742.96 | 8440.70 | 7858.20 | 7282.31 | 6526.39 | 5423.06 | 4761.28 |
| 135.0  | 8934.00 | 8844.26 | 8550.26 | 8051.45 | 7435.92 | 6596.31 | 5714.30 | 4953.42 | 4364.32 |
| 180.0  | 8932.90 | 8637.80 | 8108.71 | 7360.49 | 6573.73 | 5649.89 | 4887.36 | 4152.90 | 3600.14 |
| 225.0  | 8569.53 | 8107.05 | 7450.23 | 6481.79 | 5650.99 | 4778.34 | 4145.20 | 3594.08 | 3242.27 |
| 270.0  | 8832.15 | 8668.63 | 8271.12 | 7626.41 | 6887.56 | 5978.57 | 5097.67 | 4406.16 | 3841.84 |
| 315.0  | 8934.00 | 8907.57 | 8704.97 | 8303.06 | 7655.59 | 6909.03 | 6118.97 | 5222.65 | 4409.47 |
| 360.0  | 8932.90 | 9058.43 | 9074.95 | 8978.60 | 8702.77 | 8096.04 | 7403.98 | 6603.46 | 5768.81 |
| C/γ(°) | 9.0     | 10.0    | 11.0    | 12.0    | 13.0    | 14.0    | 15.0    | 16.0    | 17.0    |
| 0.0    | 4798.72 | 4139.69 | 3643.08 | 3248.33 | 2991.21 | 2817.24 | 2652.62 | 2502.86 | 2376.78 |
| 45.0   | 5457.19 | 4706.22 | 4000.95 | 3535.72 | 3181.71 | 2944.42 | 2785.30 | 2627.29 | 2484.14 |
| 90.0   | 4120.42 | 3488.37 | 3221.90 | 2997.27 | 2807.88 | 2652.62 | 2526.54 | 2388.35 | 2262.82 |
| 135.0  | 3665.10 | 3316.60 | 3091.97 | 2856.88 | 2685.10 | 2549.11 | 2397.16 | 2251.26 | 2140.04 |
| 180.0  | 3259.34 | 2993.97 | 2802.37 | 2655.92 | 2517.73 | 2351.46 | 2222.63 | 2096.55 | 1960.01 |
| 225.0  | 2970.29 | 2773.74 | 2622.89 | 2468.18 | 2339.90 | 2188.49 | 2062.41 | 1936.88 | 1821.82 |
| 270.0  | 3335.32 | 3059.48 | 2858.53 | 2680.15 | 2529.84 | 2407.07 | 2268.87 | 2131.23 | 2006.26 |
| 315.0  | 3834.13 | 3369.45 | 3056.73 | 2860.73 | 2710.43 | 2551.31 | 2431.29 | 2306.31 | 2173.63 |
| 360.0  | 4798.72 | 4139.69 | 3643.08 | 3248.33 | 2991.21 | 2817.24 | 2652.62 | 2502.86 | 2376.78 |
| C/γ(°) | 18.0    | 19.0    | 20.0    | 21.0    | 22.0    | 23.0    | 24.0    | 25.0    | 26.0    |
| 0.0    | 2239.69 | 2112.51 | 1973.22 | 1840.54 | 1734.83 | 1620.86 | 1509.10 | 1414.95 | 1336.77 |
| 45.0   | 2356.96 | 2229.78 | 2072.32 | 1948.45 | 1821.82 | 1704.55 | 1592.23 | 1492.58 | 1394.58 |
| 90.0   | 2119.12 | 1980.93 | 1863.11 | 1739.23 | 1623.06 | 1524.51 | 1431.47 | 1333.47 | 1244.83 |
| 135.0  | 1986.99 | 1870.82 | 1761.80 | 1633.52 | 1533.32 | 1447.43 | 1341.17 | 1259.14 | 1185.91 |
| 180.0  | 1829.52 | 1718.31 | 1599.39 | 1500.29 | 1398.98 | 1302.63 | 1222.80 | 1092.59 | 1059.62 |
| 225.0  | 1690.78 | 1590.58 | 1494.78 | 1383.57 | 1299.33 | 1210.69 | 1092.87 | 1060.99 | 1000.37 |
| 270.0  | 1879.07 | 1769.51 | 1655.55 | 1548.19 | 1460.65 | 1367.60 | 1278.41 | 1202.98 | 1133.06 |
| 315.0  | 2042.59 | 1922.02 | 1792.64 | 1674.82 | 1561.95 | 1466.70 | 1376.41 | 1283.36 | 1197.48 |
| 360.0  | 2239.69 | 2112.51 | 1973.22 | 1840.54 | 1734.83 | 1620.86 | 1509.10 | 1414.95 | 1336.77 |
| C/γ(°) | 27.0    | 28.0    | 29.0    | 30.0    | 31.0    | 32.0    | 33.0    | 34.0    | 35.0    |
| 0.0    | 1222.80 | 1146.82 | 1085.16 | 1004.23 | 929.90  | 855.03  | 726.19  | 603.97  | 506.52  |
| 45.0   | 1299.88 | 1221.70 | 1138.02 | 1068.09 | 997.07  | 923.85  | 835.21  | 713.53  | 585.80  |
| 90.0   | 1153.43 | 1096.45 | 1014.85 | 950.11  | 857.06  | 741.77  | 627.64  | 515.77  | 396.57  |
| 135.0  | 1098.93 | 1033.41 | 970.64  | 880.90  | 764.18  | 651.87  | 527.99  | 407.97  | 304.46  |
| 180.0  | 995.58  | 931.94  | 820.40  | 716.39  | 607.38  | 473.10  | 370.09  | 276.82  | 175.19  |
| 225.0  | 932.82  | 843.90  | 743.26  | 623.90  | 517.97  | 398.83  | 287.67  | 200.41  | 122.50  |
| 270.0  | 1050.48 | 988.81  | 923.30  | 823.09  | 704.17  | 592.41  | 472.38  | 357.87  | 285.19  |
| 315.0  | 1094.19 | 1042.44 | 971.86  | 903.97  | 809.33  | 672.29  | 561.47  | 454.88  | 339.92  |
| 360.0  | 1222.80 | 1146.82 | 1085.16 | 1004.23 | 929.90  | 855.03  | 726.19  | 603.97  | 506.52  |
| C/γ(°) | 36.0    | 37.0    | 38.0    | 39.0    | 40.0    | 41.0    | 42.0    | 43.0    | 44.0    |
| 0.0    | 375.48  | 280.24  | 180.03  | 99.65   | 51.20   | 33.58   | 27.91   | 24.06   | 20.92   |
| 45.0   | 476.24  | 368.88  | 281.89  | 161.15  | 95.03   | 47.24   | 30.67   | 26.54   | 22.96   |
| 90.0   | 287.28  | 197.71  | 112.76  | 54.84   | 33.86   | 28.30   | 24.78   | 21.20   | 18.22   |
| 135.0  | 291.80  | 119.20  | 57.70   | 34.69   | 30.17   | 25.66   | 21.03   | 18.17   | 15.80   |
| 180.0  | 102.90  | 52.80   | 31.93   | 27.80   | 23.95   | 20.26   | 17.67   | 15.25   | 13.43   |
| 225.0  | 54.12   | 33.69   | 28.68   | 24.28   | 21.20   | 18.39   | 15.80   | 13.82   | 12.33   |
| 270.0  | 157.13  | 89.63   | 44.43   | 30.94   | 26.65   | 22.90   | 19.93   | 17.07   | 15.09   |
| 315.0  | 237.02  | 156.47  | 82.80   | 45.26   | 32.04   | 27.69   | 24.00   | 20.43   | 17.45   |
| 360.0  | 375.48  | 280.24  | 180.03  | 99.65   | 51.20   | 33.58   | 27.91   | 24.06   | 20.92   |

| Intensity data(cd) |       |       |       |       |       |       |       |       |      | Appendix Page: 17 Total:18 |  |
|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|------|----------------------------|--|
| C/ $\gamma$ (°)    | 45.0  | 46.0  | 47.0  | 48.0  | 49.0  | 50.0  | 51.0  | 52.0  | 53.0 |                            |  |
| 0.0                | 17.67 | 15.47 | 13.71 | 12.39 | 11.45 | 10.79 | 10.41 | 10.02 | 9.80 |                            |  |
| 45.0               | 19.38 | 16.79 | 14.37 | 12.77 | 11.62 | 10.79 | 10.35 | 10.02 | 9.69 |                            |  |
| 90.0               | 16.02 | 14.09 | 12.44 | 11.07 | 10.52 | 10.02 | 9.69  | 9.47  | 9.25 |                            |  |
| 135.0              | 13.49 | 12.33 | 11.40 | 10.68 | 10.24 | 9.97  | 9.69  | 9.47  | 9.36 |                            |  |
| 180.0              | 12.22 | 11.07 | 10.30 | 10.08 | 9.80  | 9.52  | 9.30  | 9.19  | 9.08 |                            |  |
| 225.0              | 11.01 | 10.41 | 9.97  | 9.63  | 9.47  | 9.19  | 9.08  | 8.92  | 8.81 |                            |  |
| 270.0              | 12.88 | 11.78 | 11.01 | 10.35 | 9.97  | 9.69  | 9.52  | 9.25  | 9.14 |                            |  |
| 315.0              | 15.36 | 13.87 | 12.50 | 11.12 | 10.57 | 10.13 | 9.91  | 9.69  | 9.41 |                            |  |
| 360.0              | 17.67 | 15.47 | 13.71 | 12.39 | 11.45 | 10.79 | 10.41 | 10.02 | 9.80 |                            |  |
| C/ $\gamma$ (°)    | 54.0  | 55.0  | 56.0  | 57.0  | 58.0  | 59.0  | 60.0  | 61.0  | 62.0 |                            |  |
| 0.0                | 9.58  | 9.36  | 9.25  | 9.14  | 9.03  | 8.92  | 8.75  | 8.70  | 8.64 |                            |  |
| 45.0               | 9.47  | 9.30  | 9.14  | 8.97  | 8.92  | 8.81  | 8.64  | 8.53  | 8.48 |                            |  |
| 90.0               | 9.14  | 8.97  | 8.86  | 8.75  | 8.64  | 8.53  | 8.48  | 8.37  | 8.37 |                            |  |
| 135.0              | 9.14  | 9.03  | 8.86  | 8.75  | 8.64  | 8.59  | 8.53  | 8.48  | 8.42 |                            |  |
| 180.0              | 8.97  | 8.86  | 8.75  | 8.64  | 8.59  | 8.53  | 8.48  | 8.48  | 8.37 |                            |  |
| 225.0              | 8.70  | 8.59  | 8.53  | 8.48  | 8.42  | 8.37  | 8.31  | 8.26  | 8.20 |                            |  |
| 270.0              | 8.97  | 8.86  | 8.75  | 8.59  | 8.59  | 8.48  | 8.42  | 8.37  | 8.31 |                            |  |
| 315.0              | 9.25  | 9.14  | 8.97  | 8.86  | 8.75  | 8.64  | 8.59  | 8.53  | 8.42 |                            |  |
| 360.0              | 9.58  | 9.36  | 9.25  | 9.14  | 9.03  | 8.92  | 8.75  | 8.70  | 8.64 |                            |  |
| C/ $\gamma$ (°)    | 63.0  | 64.0  | 65.0  | 66.0  | 67.0  | 68.0  | 69.0  | 70.0  | 71.0 |                            |  |
| 0.0                | 8.53  | 8.53  | 8.48  | 8.48  | 8.42  | 8.37  | 8.37  | 8.31  | 8.26 |                            |  |
| 45.0               | 8.42  | 8.37  | 8.37  | 8.31  | 8.26  | 8.20  | 8.20  | 8.15  | 8.20 |                            |  |
| 90.0               | 8.31  | 8.26  | 8.20  | 8.20  | 8.15  | 8.09  | 8.09  | 8.09  | 8.09 |                            |  |
| 135.0              | 8.37  | 8.31  | 8.26  | 8.26  | 8.26  | 8.20  | 8.20  | 8.20  | 8.15 |                            |  |
| 180.0              | 8.31  | 8.31  | 8.31  | 8.26  | 8.26  | 8.26  | 8.20  | 8.20  | 8.20 |                            |  |
| 225.0              | 8.20  | 8.20  | 8.15  | 8.15  | 8.09  | 8.09  | 8.09  | 8.09  | 8.09 |                            |  |
| 270.0              | 8.31  | 8.20  | 8.20  | 8.20  | 8.15  | 8.15  | 8.09  | 8.15  | 8.09 |                            |  |
| 315.0              | 8.37  | 8.31  | 8.31  | 8.20  | 8.20  | 8.20  | 8.20  | 8.15  | 8.15 |                            |  |
| 360.0              | 8.53  | 8.53  | 8.48  | 8.48  | 8.42  | 8.37  | 8.37  | 8.31  | 8.26 |                            |  |
| C/ $\gamma$ (°)    | 72.0  | 73.0  | 74.0  | 75.0  | 76.0  | 77.0  | 78.0  | 79.0  | 80.0 |                            |  |
| 0.0                | 8.26  | 8.26  | 8.26  | 8.26  | 8.26  | 8.20  | 8.20  | 8.15  | 8.15 |                            |  |
| 45.0               | 8.20  | 8.15  | 8.15  | 8.15  | 8.09  | 8.09  | 8.04  | 8.04  | 8.09 |                            |  |
| 90.0               | 8.09  | 8.04  | 8.04  | 7.98  | 7.98  | 7.98  | 7.98  | 7.98  | 7.98 |                            |  |
| 135.0              | 8.09  | 8.09  | 8.09  | 8.04  | 8.09  | 8.09  | 8.09  | 8.09  | 8.09 |                            |  |
| 180.0              | 8.20  | 8.20  | 8.20  | 8.20  | 8.15  | 8.15  | 8.15  | 8.15  | 8.20 |                            |  |
| 225.0              | 8.09  | 8.04  | 8.04  | 8.04  | 8.09  | 8.09  | 8.04  | 8.04  | 8.04 |                            |  |
| 270.0              | 8.09  | 8.04  | 8.04  | 8.04  | 8.04  | 8.04  | 8.04  | 7.98  | 8.04 |                            |  |
| 315.0              | 8.09  | 8.09  | 8.04  | 8.04  | 8.09  | 8.09  | 8.04  | 8.09  | 8.04 |                            |  |
| 360.0              | 8.26  | 8.26  | 8.26  | 8.26  | 8.26  | 8.20  | 8.20  | 8.15  | 8.15 |                            |  |
| C/ $\gamma$ (°)    | 81.0  | 82.0  | 83.0  | 84.0  | 85.0  | 86.0  | 87.0  | 88.0  | 89.0 |                            |  |
| 0.0                | 8.20  | 8.15  | 8.09  | 8.09  | 8.15  | 8.09  | 8.15  | 8.15  | 8.15 |                            |  |
| 45.0               | 8.09  | 8.04  | 8.04  | 8.04  | 7.98  | 8.04  | 7.98  | 8.04  | 7.98 |                            |  |
| 90.0               | 7.98  | 7.98  | 7.98  | 7.93  | 7.98  | 7.98  | 7.98  | 7.93  | 7.98 |                            |  |
| 135.0              | 8.04  | 8.04  | 8.04  | 8.04  | 8.04  | 8.04  | 8.04  | 7.98  | 7.98 |                            |  |
| 180.0              | 8.20  | 8.20  | 8.20  | 8.26  | 8.31  | 8.09  | 8.09  | 8.09  | 8.09 |                            |  |
| 225.0              | 8.04  | 8.09  | 8.09  | 8.20  | 8.20  | 7.98  | 7.98  | 7.98  | 7.98 |                            |  |
| 270.0              | 7.98  | 8.04  | 7.98  | 7.98  | 8.04  | 7.98  | 7.93  | 7.98  | 7.98 |                            |  |
| 315.0              | 8.04  | 7.98  | 7.98  | 8.04  | 7.98  | 8.04  | 8.04  | 7.98  | 7.98 |                            |  |
| 360.0              | 8.20  | 8.15  | 8.09  | 8.09  | 8.15  | 8.09  | 8.15  | 8.15  | 8.15 |                            |  |

## Intensity data(cd)

Appendix Page: 18 Total:18

|                       |      |
|-----------------------|------|
| C/ $\gamma(^{\circ})$ | 90.0 |
| 0.0                   | 8.15 |
| 45.0                  | 7.98 |
| 90.0                  | 7.93 |
| 135.0                 | 7.98 |
| 180.0                 | 8.04 |
| 225.0                 | 7.98 |
| 270.0                 | 7.98 |
| 315.0                 | 7.98 |
| 360.0                 | 8.15 |