



NATA LIGHTING CO.,LTD.  
www.nata.cn  
Email:info@nata.com  
Tel:+86 571 85021543 Fax:+86 571 87977635  
Address:Address:Address:380JinOu Road,GaoXin Zone,Jiang Men City,Guangdong,ChinaNata

NT

Client: NT

LumCAT: 62-0092

Luminaire: 92.70.427.00

Report No:

Ballast type: AC

Test No: 20250619-C010

Voltage(V): 35.700

LampCAT: CITIZEN CLU028

Current(A): 0.361

Lamp flux(lm): 1540.0

Power (W): 12.830

Number of Lamps: 1

PF: 0.000

Length(mm): 55

Width(mm): 55

Phm Type: C

Height(mm): 25

#### Photometric Results

Lumens(lm): 1456.94, Efficiency(%): 94.61% , Luminous Efficacy(lm/W): 113.56

Central intensity(cd): 7588.656, Maximum intensity(cd): 7661.663

Angle of maximum intensity: C=270.0  $\gamma$ =2.0

Beam Angle(50%Imax): [C0/180]Total=23.8

[C90/270]Total=24.2

Field angle(10%Imax): [C0/180]Total=39.0

[C90/270]Total=39.7

Maximum s/h(1/2): C0\_180=0.43 C90\_270=0.33

Maximum s/h(1/4): C0\_180=0.40 C90\_270=0.34

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 94.64%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 97.526%

Equipment: GMS 1800  
Temperature(°C): 25.0

Date: 2025/6/19  
Humidity(%): 60.0%

Operator: NT  
Distance(m): 7.30

| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 0.0                | 7582.661      | 0.000       | 0         | 0.00%       | 0.00%      |
| 1.0                | 7548.888      | 7.240       | 7.24      | 0.47%       | 0.50%      |
| 2.0                | 7465.822      | 21.551      | 28.791    | 1.40%       | 1.98%      |
| 3.0                | 7318.809      | 35.360      | 64.151    | 2.30%       | 4.40%      |
| 4.0                | 7105.915      | 48.284      | 112.435   | 3.14%       | 7.72%      |
| 5.0                | 6873.171      | 60.137      | 172.572   | 3.91%       | 11.84%     |
| 6.0                | 6553.031      | 70.558      | 243.13    | 4.58%       | 16.69%     |
| 7.0                | 6194.589      | 79.124      | 322.255   | 5.14%       | 22.12%     |
| 8.0                | 5789.585      | 85.768      | 408.023   | 5.57%       | 28.01%     |
| 9.0                | 5324.830      | 90.076      | 498.099   | 5.85%       | 34.19%     |
| 10.0               | 4852.614      | 92.102      | 590.202   | 5.98%       | 40.51%     |
| 11.0               | 4352.288      | 91.976      | 682.177   | 5.97%       | 46.82%     |
| 12.0               | 3817.922      | 89.312      | 771.49    | 5.80%       | 52.95%     |
| 13.0               | 3331.784      | 84.849      | 856.339   | 5.51%       | 58.78%     |
| 14.0               | 2836.587      | 78.955      | 935.293   | 5.13%       | 64.20%     |
| 15.0               | 2295.027      | 70.449      | 1005.742  | 4.57%       | 69.03%     |
| 16.0               | 1904.878      | 61.540      | 1067.283  | 4.00%       | 73.26%     |
| 17.0               | 1565.021      | 54.036      | 1121.318  | 3.51%       | 76.96%     |
| 18.0               | 1213.693      | 45.815      | 1167.133  | 2.97%       | 80.11%     |
| 19.0               | 931.023       | 37.314      | 1204.447  | 2.42%       | 82.67%     |
| 20.0               | 740.438       | 30.592      | 1235.039  | 1.99%       | 84.77%     |
| 21.0               | 558.379       | 24.940      | 1259.979  | 1.62%       | 86.48%     |
| 22.0               | 410.539       | 19.471      | 1279.45   | 1.26%       | 87.82%     |
| 23.0               | 318.175       | 15.290      | 1294.74   | 0.99%       | 88.87%     |
| 24.0               | 254.720       | 12.526      | 1307.266  | 0.81%       | 89.73%     |
| 25.0               | 184.077       | 9.977       | 1317.243  | 0.65%       | 90.41%     |
| 26.0               | 136.975       | 7.578       | 1324.822  | 0.49%       | 90.93%     |
| 27.0               | 117.851       | 6.234       | 1331.056  | 0.40%       | 91.36%     |
| 28.0               | 86.823        | 5.182       | 1336.238  | 0.34%       | 91.72%     |
| 29.0               | 74.366        | 4.217       | 1340.455  | 0.27%       | 92.01%     |
| 30.0               | 65.447        | 3.775       | 1344.23   | 0.25%       | 92.26%     |
| 31.0               | 58.879        | 3.460       | 1347.69   | 0.22%       | 92.50%     |
| 32.0               | 54.036        | 3.235       | 1350.925  | 0.21%       | 92.72%     |
| 33.0               | 49.879        | 3.061       | 1353.986  | 0.20%       | 92.93%     |
| 34.0               | 46.369        | 2.913       | 1356.899  | 0.19%       | 93.13%     |
| 35.0               | 43.851        | 2.802       | 1359.701  | 0.18%       | 93.33%     |
| 36.0               | 41.293        | 2.711       | 1362.412  | 0.18%       | 93.51%     |
| 37.0               | 39.281        | 2.628       | 1365.04   | 0.17%       | 93.69%     |

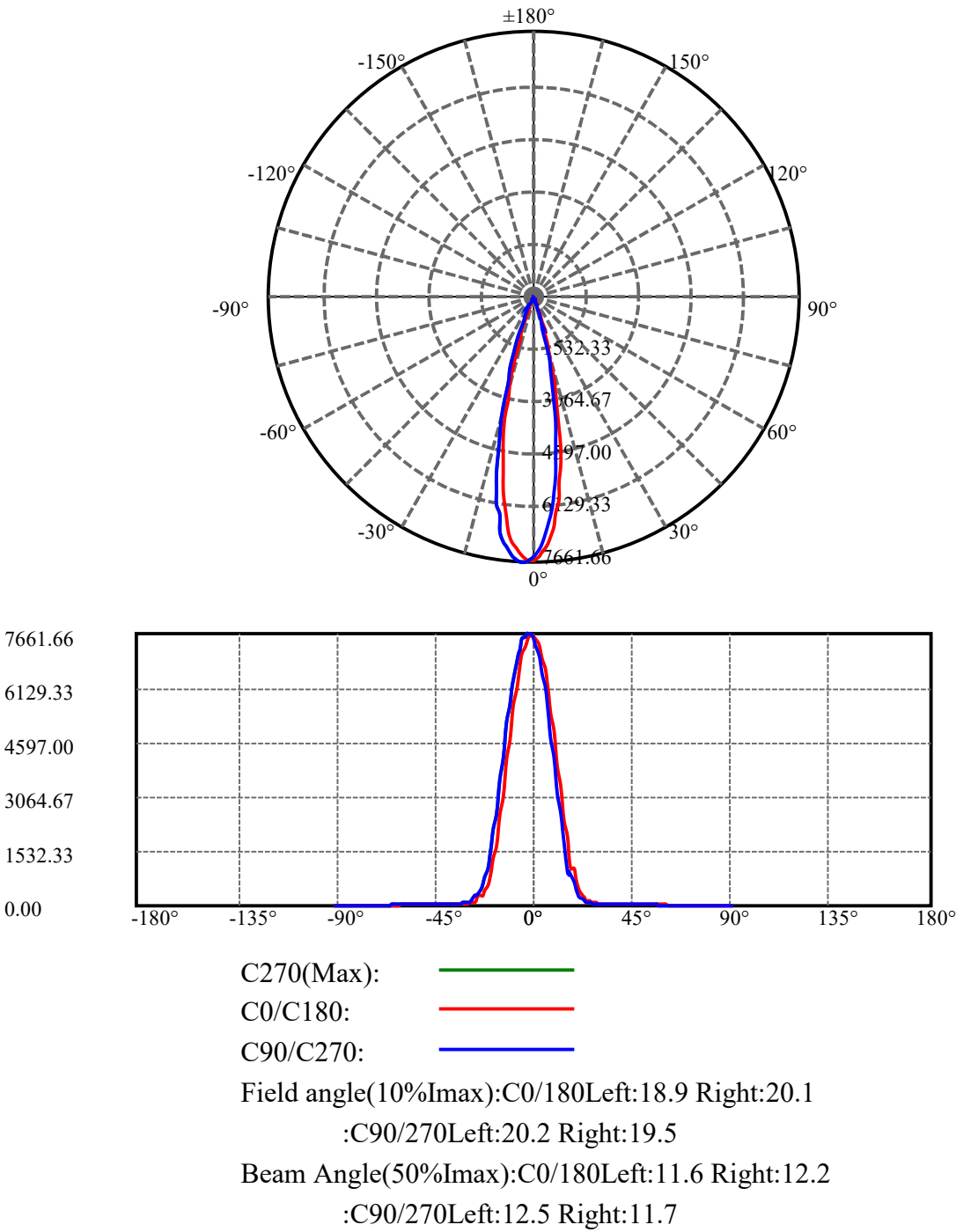
| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 38.0               | 37.563        | 2.565       | 1367.605  | 0.17%       | 93.87%     |
| 39.0               | 35.964        | 2.510       | 1370.114  | 0.16%       | 94.04%     |
| 40.0               | 34.572        | 2.460       | 1372.574  | 0.16%       | 94.21%     |
| 41.0               | 33.593        | 2.427       | 1375.002  | 0.16%       | 94.38%     |
| 42.0               | 32.680        | 2.408       | 1377.409  | 0.16%       | 94.54%     |
| 43.0               | 31.954        | 2.394       | 1379.804  | 0.16%       | 94.71%     |
| 44.0               | 31.295        | 2.387       | 1382.191  | 0.16%       | 94.87%     |
| 45.0               | 30.795        | 2.386       | 1384.577  | 0.15%       | 95.03%     |
| 46.0               | 30.455        | 2.395       | 1386.972  | 0.16%       | 95.20%     |
| 47.0               | 30.069        | 2.407       | 1389.38   | 0.16%       | 95.36%     |
| 48.0               | 29.842        | 2.422       | 1391.801  | 0.16%       | 95.53%     |
| 49.0               | 29.656        | 2.443       | 1394.245  | 0.16%       | 95.70%     |
| 50.0               | 29.456        | 2.465       | 1396.709  | 0.16%       | 95.87%     |
| 51.0               | 29.263        | 2.484       | 1399.194  | 0.16%       | 96.04%     |
| 52.0               | 29.050        | 2.502       | 1401.696  | 0.16%       | 96.21%     |
| 53.0               | 28.790        | 2.516       | 1404.212  | 0.16%       | 96.38%     |
| 54.0               | 28.437        | 2.522       | 1406.734  | 0.16%       | 96.55%     |
| 55.0               | 27.897        | 2.515       | 1409.249  | 0.16%       | 96.73%     |
| 56.0               | 27.384        | 2.498       | 1411.747  | 0.16%       | 96.90%     |
| 57.0               | 26.632        | 2.470       | 1414.217  | 0.16%       | 97.07%     |
| 58.0               | 25.832        | 2.426       | 1416.643  | 0.16%       | 97.23%     |
| 59.0               | 25.046        | 2.379       | 1419.021  | 0.15%       | 97.40%     |
| 60.0               | 24.160        | 2.325       | 1421.346  | 0.15%       | 97.56%     |
| 61.0               | 23.228        | 2.261       | 1423.608  | 0.15%       | 97.71%     |
| 62.0               | 22.242        | 2.191       | 1425.799  | 0.14%       | 97.86%     |
| 63.0               | 21.283        | 2.117       | 1427.915  | 0.14%       | 98.01%     |
| 64.0               | 20.397        | 2.045       | 1429.961  | 0.13%       | 98.15%     |
| 65.0               | 19.497        | 1.974       | 1431.935  | 0.13%       | 98.28%     |
| 66.0               | 18.578        | 1.900       | 1433.835  | 0.12%       | 98.41%     |
| 67.0               | 17.839        | 1.831       | 1435.666  | 0.12%       | 98.54%     |
| 68.0               | 17.039        | 1.767       | 1437.433  | 0.11%       | 98.66%     |
| 69.0               | 16.174        | 1.694       | 1439.127  | 0.11%       | 98.78%     |
| 70.0               | 15.254        | 1.614       | 1440.741  | 0.10%       | 98.89%     |
| 71.0               | 14.362        | 1.531       | 1442.272  | 0.10%       | 98.99%     |
| 72.0               | 13.329        | 1.440       | 1443.712  | 0.09%       | 99.09%     |
| 73.0               | 12.430        | 1.347       | 1445.059  | 0.09%       | 99.18%     |
| 74.0               | 11.537        | 1.260       | 1446.319  | 0.08%       | 99.27%     |
| 75.0               | 10.745        | 1.177       | 1447.496  | 0.08%       | 99.35%     |

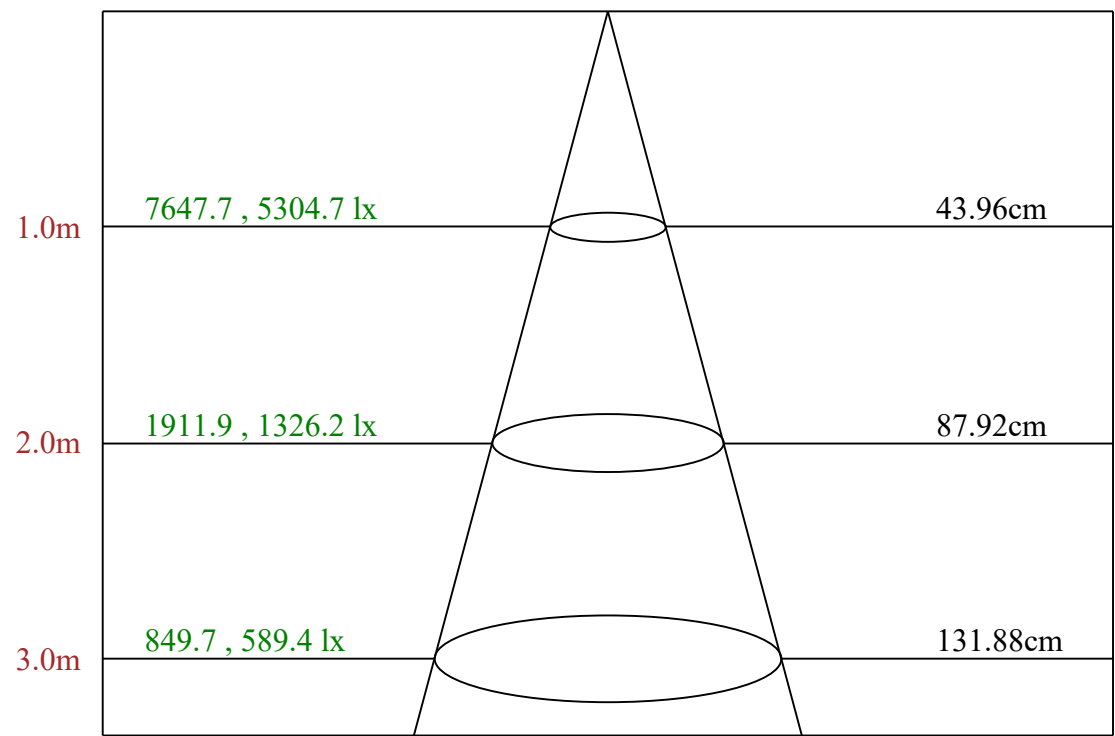
| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 76.0               | 9.892         | 1.095       | 1448.591  | 0.07%       | 99.43%     |
| 77.0               | 9.179         | 1.017       | 1449.608  | 0.07%       | 99.50%     |
| 78.0               | 8.360         | 0.939       | 1450.547  | 0.06%       | 99.56%     |
| 79.0               | 7.620         | 0.859       | 1451.406  | 0.06%       | 99.62%     |
| 80.0               | 6.941         | 0.785       | 1452.191  | 0.05%       | 99.67%     |
| 81.0               | 6.242         | 0.713       | 1452.904  | 0.05%       | 99.72%     |
| 82.0               | 5.722         | 0.649       | 1453.552  | 0.04%       | 99.77%     |
| 83.0               | 5.116         | 0.589       | 1454.142  | 0.04%       | 99.81%     |
| 84.0               | 4.630         | 0.531       | 1454.672  | 0.03%       | 99.84%     |
| 85.0               | 4.203         | 0.482       | 1455.155  | 0.03%       | 99.88%     |
| 86.0               | 3.737         | 0.434       | 1455.589  | 0.03%       | 99.91%     |
| 87.0               | 3.364         | 0.389       | 1455.977  | 0.03%       | 99.93%     |
| 88.0               | 3.038         | 0.351       | 1456.328  | 0.02%       | 99.96%     |
| 89.0               | 2.744         | 0.317       | 1456.645  | 0.02%       | 99.98%     |
| 90.0               | 2.585         | 0.292       | 1456.937  | 0.02%       | 100.00%    |

| ZONAL LUMEN SUMMARY |         |        |         |
|---------------------|---------|--------|---------|
| Zone                | Lumens  | %Lamp  | %Fixt   |
| 0-30                | 1344.23 | 87.29% | 92.26%  |
| 0-40                | 1372.57 | 89.13% | 94.21%  |
| 0-60                | 1421.35 | 92.30% | 97.56%  |
| 0-90                | 1456.64 | 94.59% | 99.98%  |
| 0-120               | 1456.64 | 94.59% | 99.98%  |
| 0-180               | 1456.94 | 94.61% | 100.00% |
| 60-90               | 35.30   | 2.29%  | 2.42%   |
| 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%   |
| 0-17.97             | 1165.55 | 75.69% | 80.00%  |

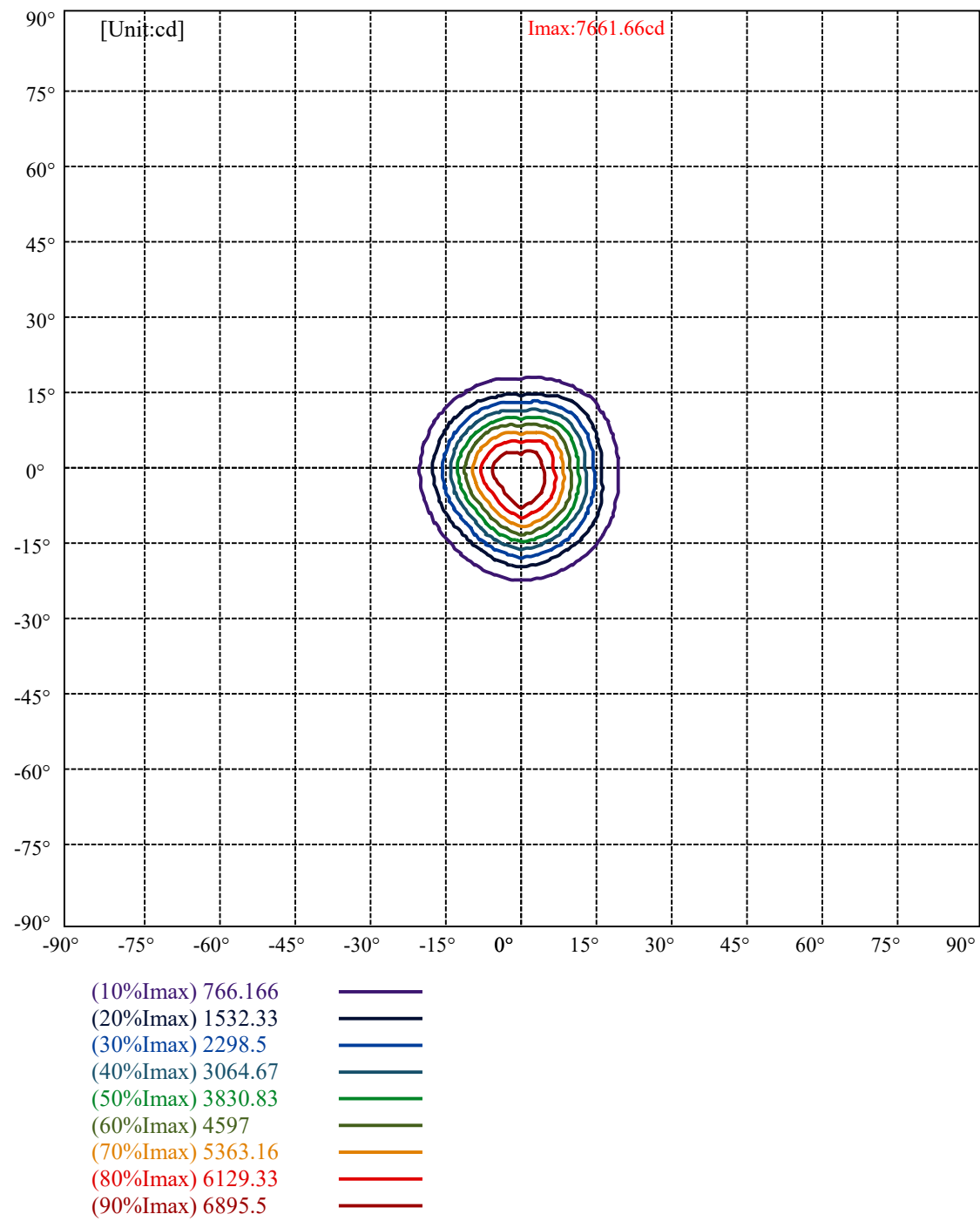
ZONAL LUMEN SUMMARY

|         |        |
|---------|--------|
| 0-10    | 590.20 |
| 10-20   | 644.84 |
| 20-30   | 109.19 |
| 30-40   | 28.34  |
| 40-50   | 24.14  |
| 50-60   | 24.64  |
| 60-70   | 19.39  |
| 70-80   | 11.45  |
| 80-90   | 4.45   |
| 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   |

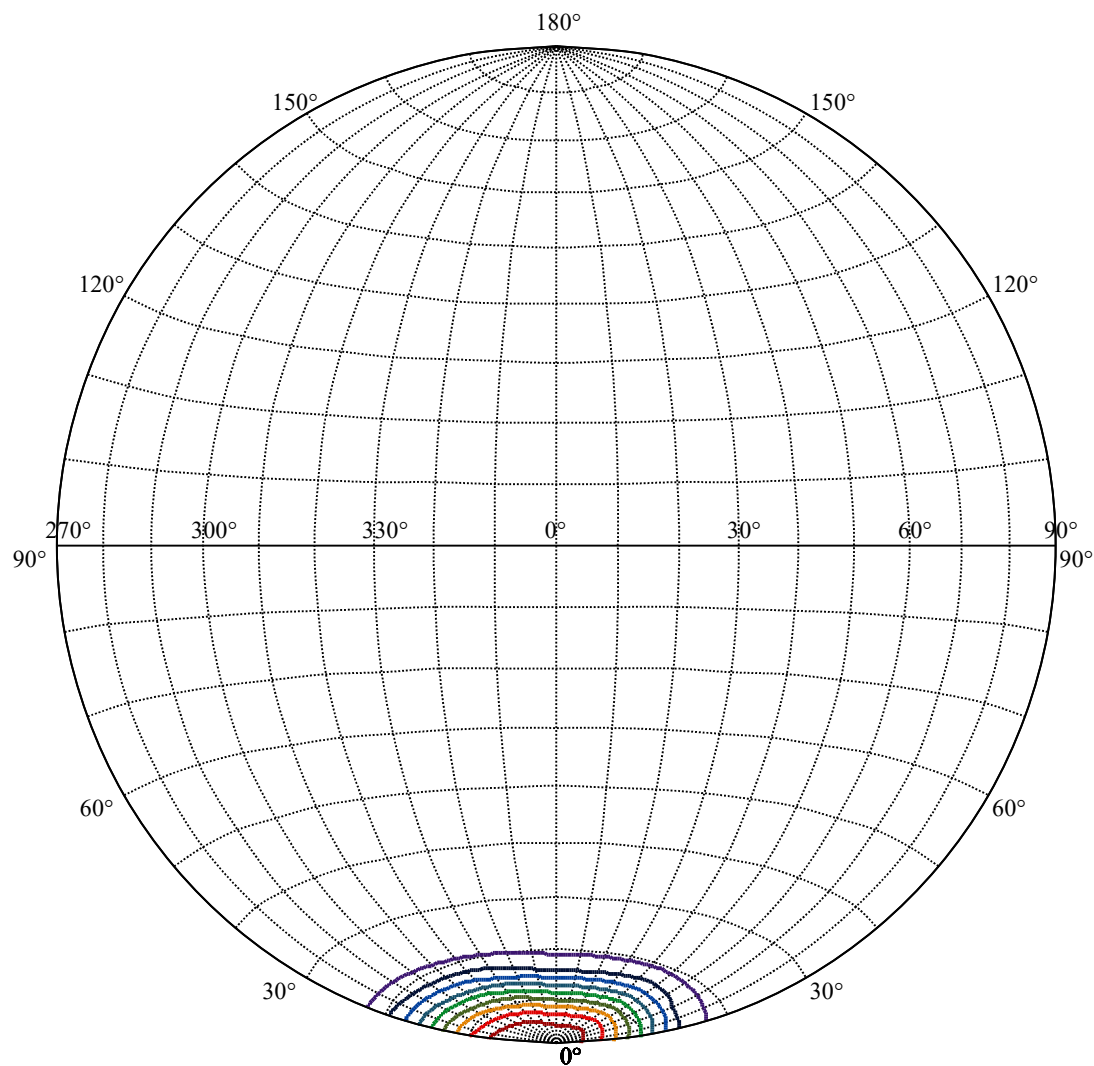




Max , Ave      Beam angle of C270 plane 24.79





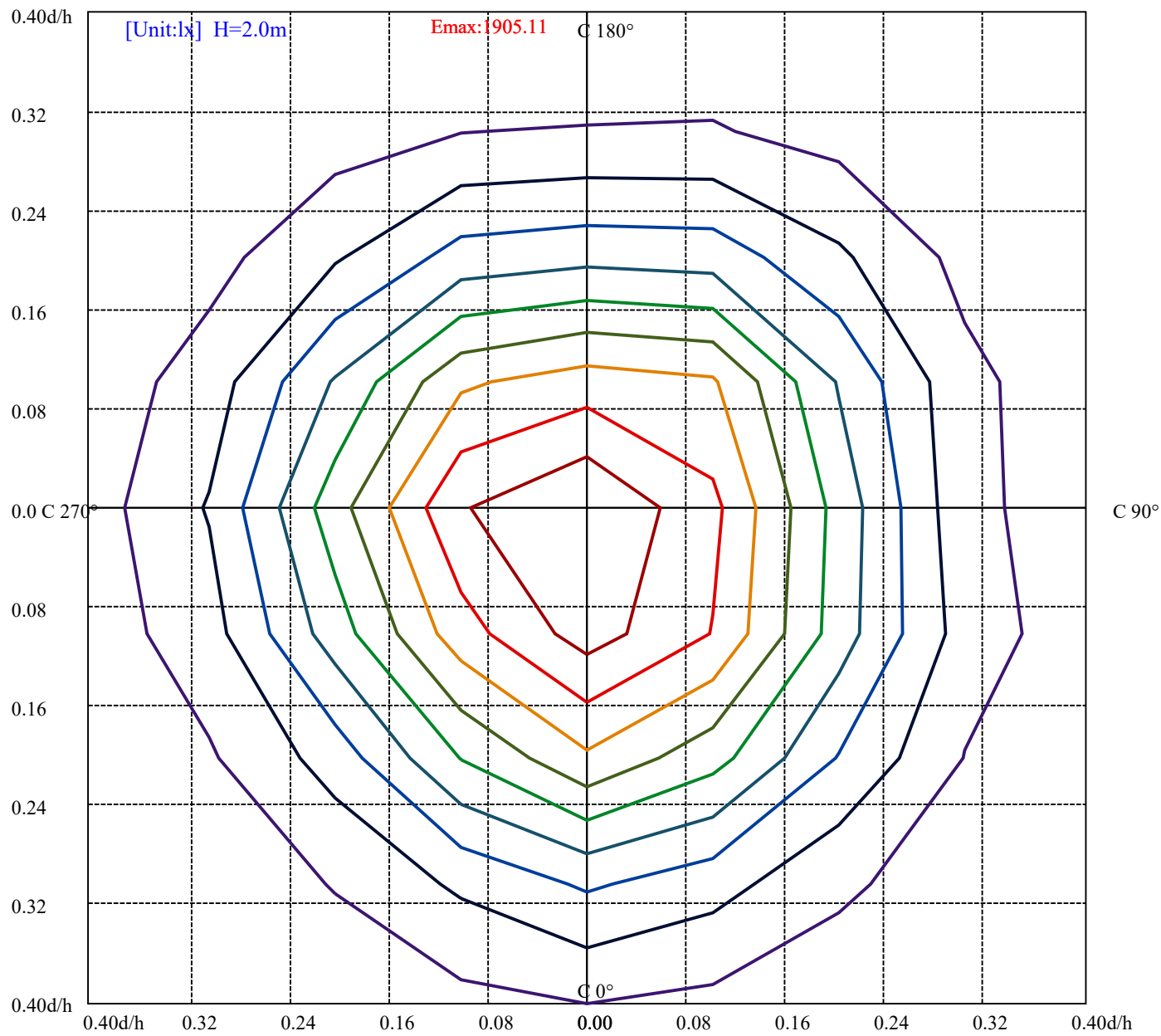


House

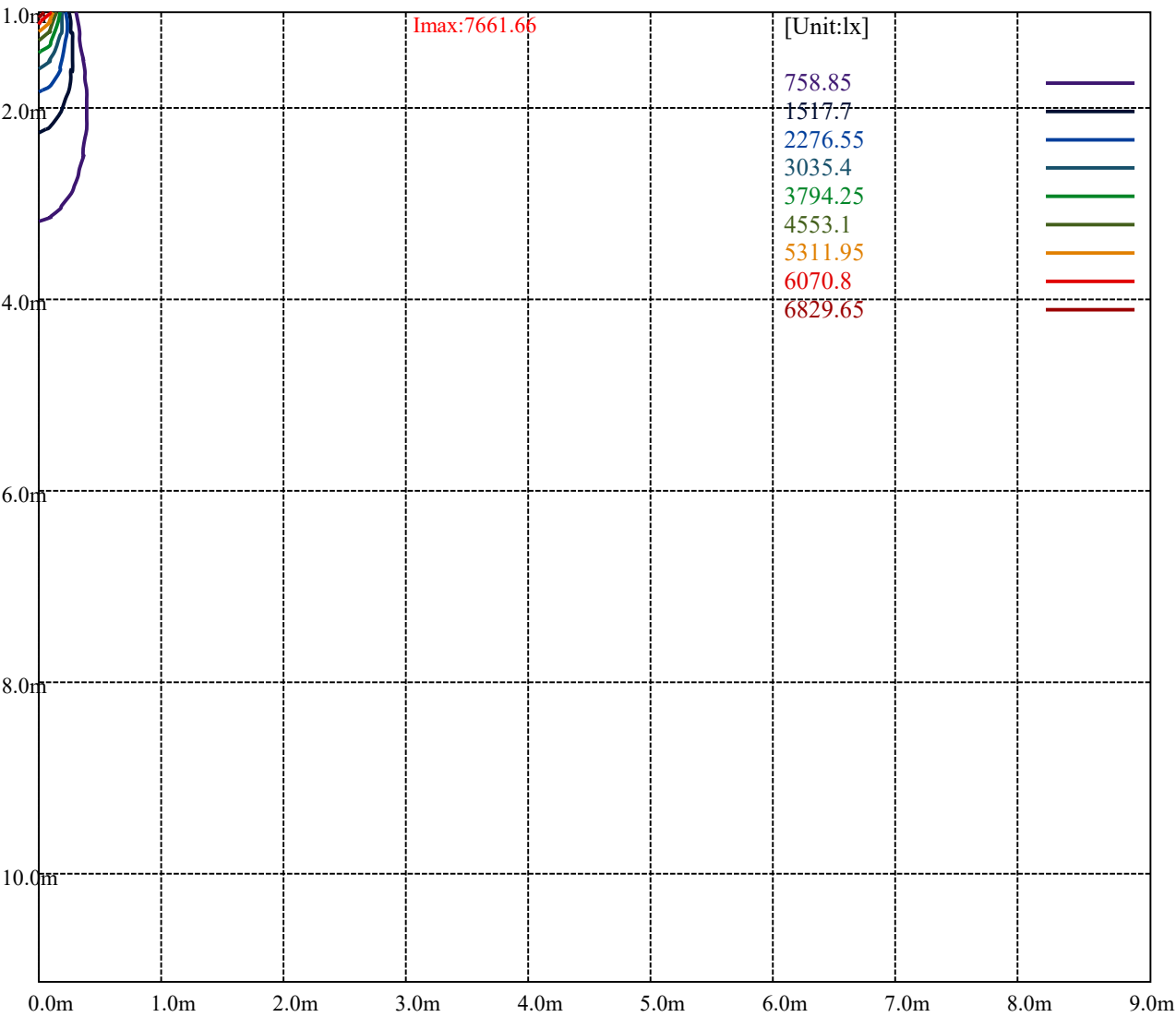
[Unit:cd]

Road

|              |         |
|--------------|---------|
| Imax:7661.66 |         |
| (10%Imax)    | 766.31  |
| (20%Imax)    | 1532.62 |
| (30%Imax)    | 2298.93 |
| (40%Imax)    | 3065.24 |
| (50%Imax)    | 3831.55 |
| (60%Imax)    | 4597.86 |
| (70%Imax)    | 5364.17 |
| (80%Imax)    | 6130.48 |
| (90%Imax)    | 6896.79 |



|           |          |  |
|-----------|----------|--|
| (10%Emax) | 190.5112 |  |
| (20%Emax) | 381.0225 |  |
| (30%Emax) | 571.5325 |  |
| (40%Emax) | 762.045  |  |
| (50%Emax) | 952.555  |  |
| (60%Emax) | 1143.068 |  |
| (70%Emax) | 1333.578 |  |
| (80%Emax) | 1524.09  |  |
| (90%Emax) | 1714.6   |  |



Luminance Table

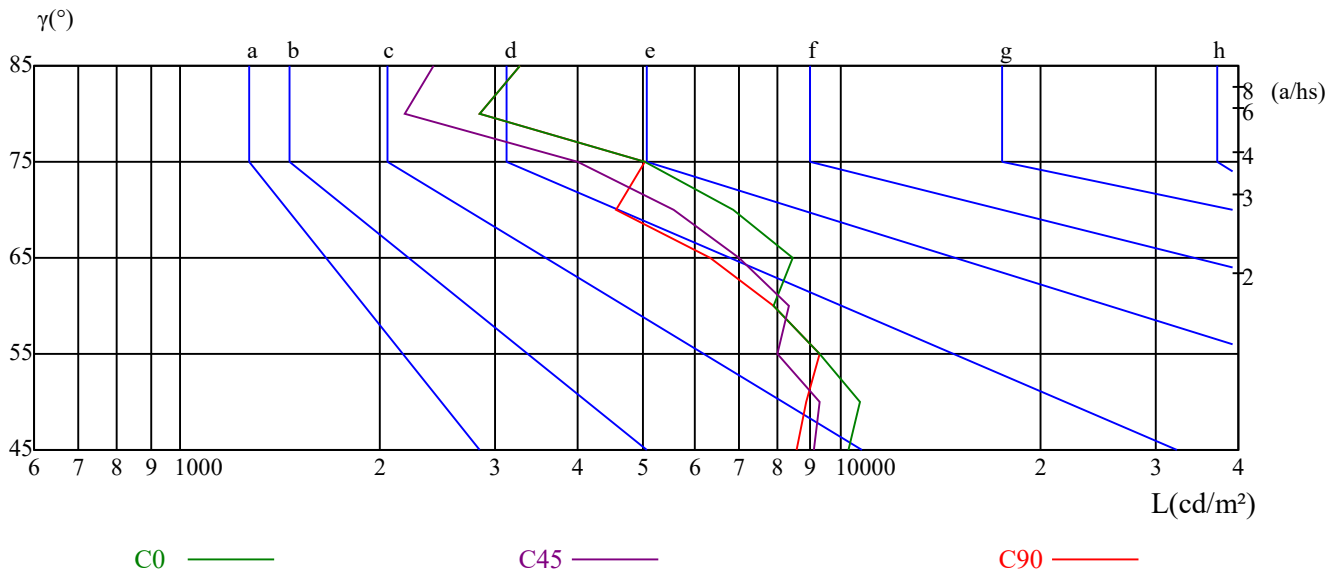
| $\gamma$ | 45    | 50    | 55   | 60   | 65   | 70   | 75   | 80   | 85   |
|----------|-------|-------|------|------|------|------|------|------|------|
| C0       | 10277 | 10666 | 9312 | 7885 | 8443 | 6871 | 5049 | 2835 | 3262 |
| C45      | 9099  | 9311  | 8006 | 8336 | 7010 | 5586 | 4005 | 2184 | 2421 |
| C90      | 8564  | 8888  | 9312 | 7885 | 6333 | 4581 | 5049 | 2835 | 3262 |

| L(Hor)(65) | L(Ver)(65) | L45(65) | L(Hor)(75) | L(Ver)(75) | L45(75) | L(Hor)(85) | L(Ver)(85) | L45(85) |
|------------|------------|---------|------------|------------|---------|------------|------------|---------|
| 16674      | 14589      | 16674   | 13613      | 17016      | 13613   | 20213      | 20213      | 20213   |

Glare Table

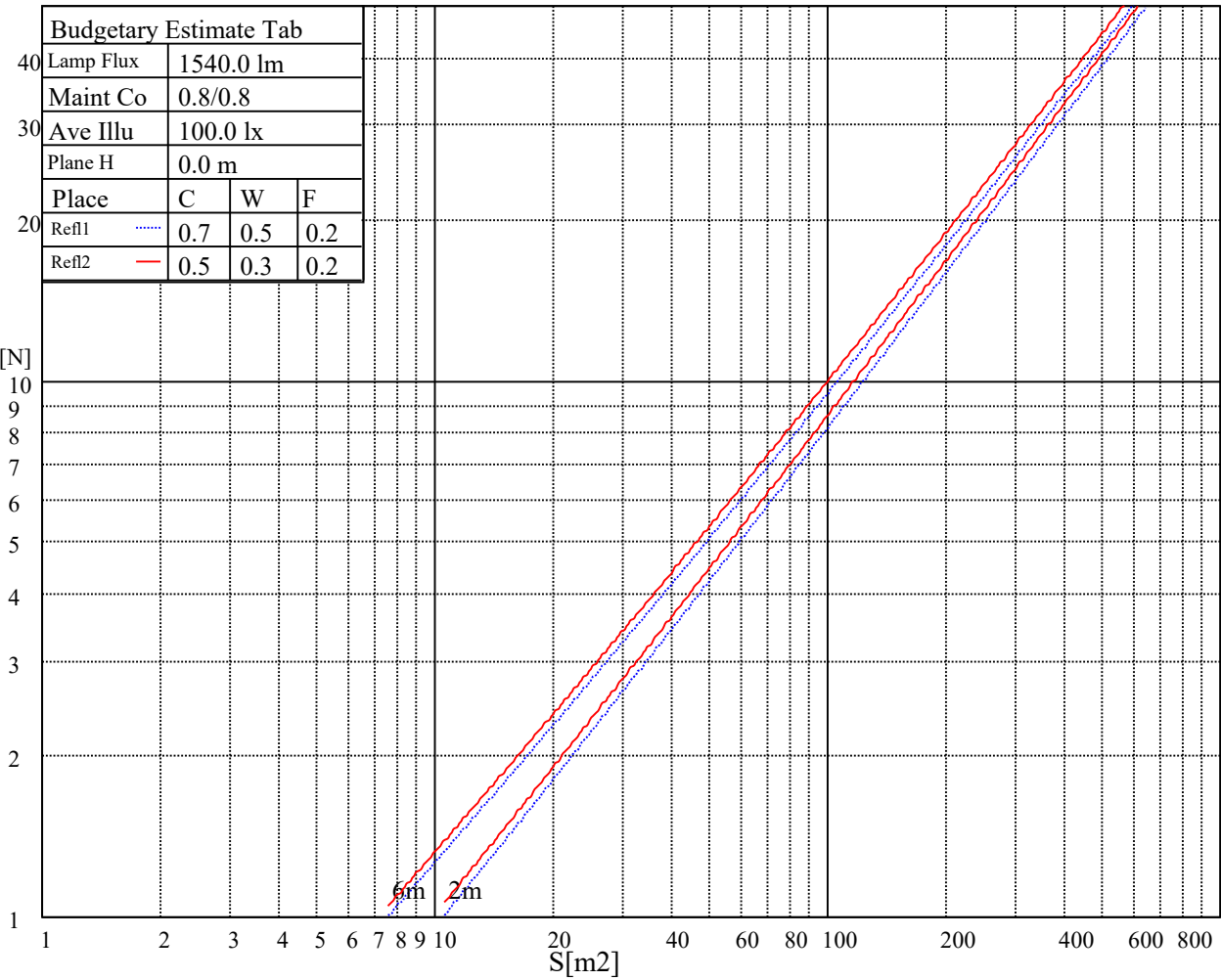
| Glare | Quality | Service Values Illuminance(lx) |      |      |       |       |       |       |       |
|-------|---------|--------------------------------|------|------|-------|-------|-------|-------|-------|
| 1.15  | A       | 2000                           | 1000 | 500  | <=300 |       |    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

Luminance Limiting Curve

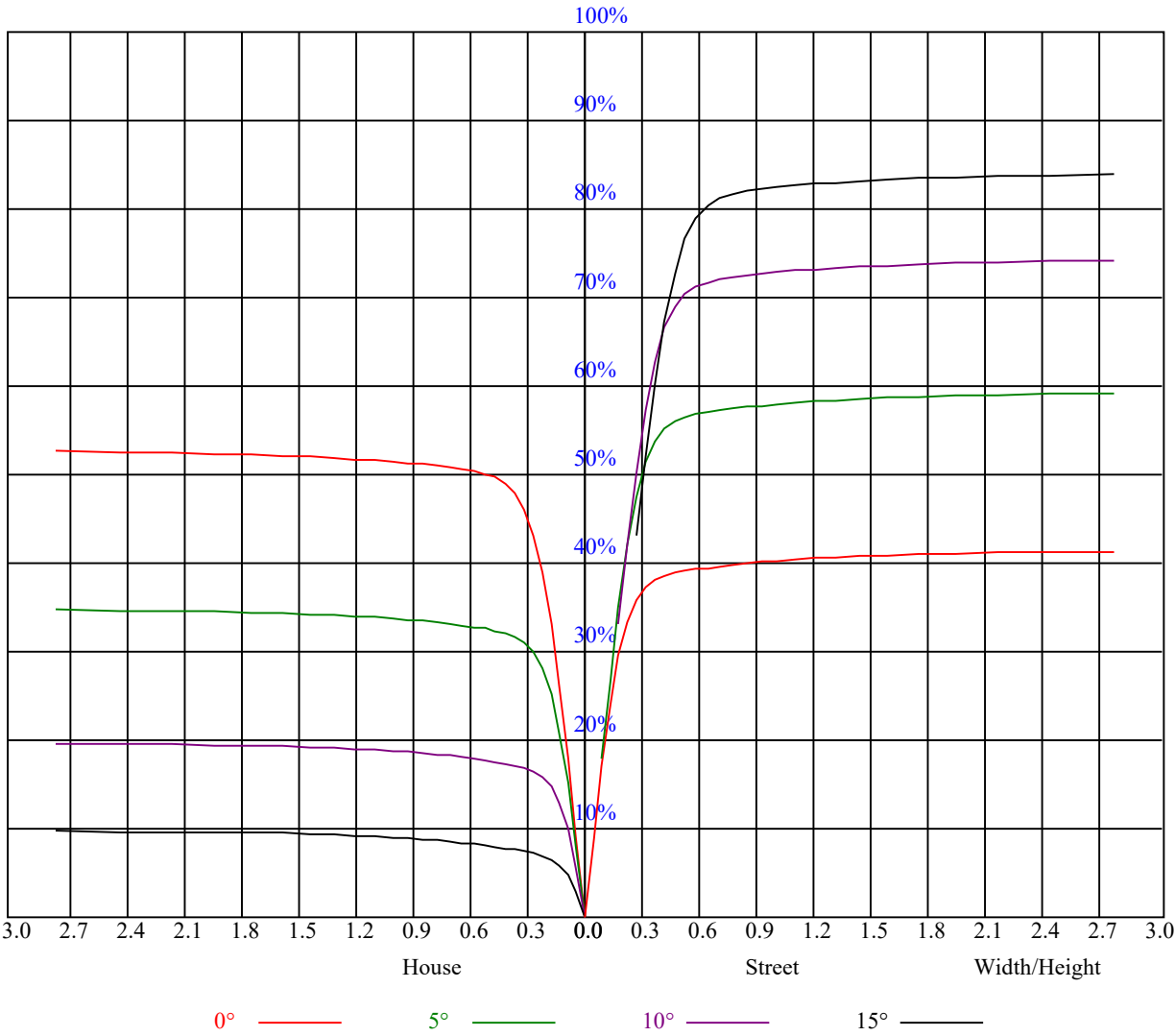


| Illumination assessment according UGR             |     |                  |       |       |       |       |                |       |       |       |       |
|---------------------------------------------------|-----|------------------|-------|-------|-------|-------|----------------|-------|-------|-------|-------|
| Rf of Ceiling                                     |     | 70               | 70    | 50    | 50    | 30    | 70             | 70    | 50    | 50    | 30    |
| Rf of Wall                                        |     | 50               | 30    | 50    | 30    | 30    | 50             | 30    | 50    | 30    | 30    |
| Rf of Floor                                       |     | 20               | 20    | 20    | 20    | 20    | 20             | 20    | 20    | 20    | 20    |
| Room dimensions                                   |     | Viewed crosswise |       |       |       |       | Viewed endwise |       |       |       |       |
| X                                                 | Y   |                  |       |       |       |       |                |       |       |       |       |
| 2H                                                | 2H  | 12.53            | 13.50 | 12.90 | 13.81 | 14.13 | 12.11          | 13.08 | 12.47 | 13.39 | 13.71 |
|                                                   | 3H  | 14.00            | 14.87 | 14.39 | 15.20 | 15.55 | 13.47          | 14.33 | 13.86 | 14.67 | 15.02 |
|                                                   | 4H  | 14.46            | 15.26 | 14.86 | 15.62 | 15.98 | 13.88          | 14.68 | 14.28 | 15.03 | 15.40 |
|                                                   | 6H  | 14.79            | 15.52 | 15.21 | 15.89 | 16.29 | 14.13          | 14.86 | 14.55 | 15.24 | 15.64 |
|                                                   | 8H  | 14.85            | 15.55 | 15.27 | 15.94 | 16.34 | 14.17          | 14.87 | 14.59 | 15.25 | 15.66 |
|                                                   | 12H | 14.89            | 15.55 | 15.32 | 15.95 | 16.37 | 14.19          | 14.85 | 14.61 | 15.24 | 15.66 |
| 4H                                                | 2H  | 13.10            | 13.90 | 13.51 | 14.26 | 14.63 | 12.78          | 13.58 | 13.18 | 13.93 | 14.30 |
|                                                   | 3H  | 14.66            | 15.33 | 15.08 | 15.73 | 16.14 | 14.22          | 14.90 | 14.65 | 15.29 | 15.71 |
|                                                   | 4H  | 15.25            | 15.83 | 15.69 | 16.25 | 16.70 | 14.76          | 15.34 | 15.20 | 15.76 | 16.21 |
|                                                   | 6H  | 15.61            | 16.12 | 16.09 | 16.58 | 17.03 | 15.04          | 15.56 | 15.52 | 16.01 | 16.46 |
|                                                   | 8H  | 15.73            | 16.21 | 16.22 | 16.67 | 17.14 | 15.13          | 15.61 | 15.62 | 16.07 | 16.54 |
|                                                   | 12H | 15.83            | 16.27 | 16.32 | 16.72 | 17.24 | 15.20          | 15.63 | 15.69 | 16.09 | 16.61 |
| 8H                                                | 4H  | 15.36            | 15.83 | 15.84 | 16.29 | 16.77 | 14.92          | 15.39 | 15.40 | 15.85 | 16.32 |
|                                                   | 6H  | 15.82            | 16.20 | 16.32 | 16.68 | 17.19 | 15.30          | 15.68 | 15.80 | 16.16 | 16.67 |
|                                                   | 8H  | 16.04            | 16.37 | 16.58 | 16.89 | 17.39 | 15.49          | 15.81 | 16.02 | 16.34 | 16.83 |
|                                                   | 12H | 16.20            | 16.45 | 16.74 | 16.96 | 17.49 | 15.61          | 15.86 | 16.15 | 16.37 | 16.90 |
| 12H                                               | 4H  | 15.34            | 15.78 | 15.83 | 16.23 | 16.75 | 14.91          | 15.34 | 15.40 | 15.80 | 16.32 |
|                                                   | 6H  | 15.86            | 16.19 | 16.40 | 16.71 | 17.21 | 15.36          | 15.68 | 15.89 | 16.21 | 16.70 |
|                                                   | 8H  | 16.08            | 16.33 | 16.63 | 16.85 | 17.37 | 15.55          | 15.79 | 16.09 | 16.31 | 16.83 |
| Variation with the observer position at spacings: |     |                  |       |       |       |       |                |       |       |       |       |
| S = 1.0H                                          |     | 0.3/-0.6         |       |       |       |       | 0.3/-0.6       |       |       |       |       |
| S = 1.5H                                          |     | 0.6/-0.8         |       |       |       |       | 0.6/-0.6       |       |       |       |       |
| S = 2.0H                                          |     | 1.0/-1.0         |       |       |       |       | 0.9/-0.8       |       |       |       |       |
| Standard tables:                                  |     | BK3              |       |       |       |       | BK3            |       |       |       |       |
| Uncorrected UGR                                   |     | -3.4             |       |       |       |       | -2.9           |       |       |       |       |

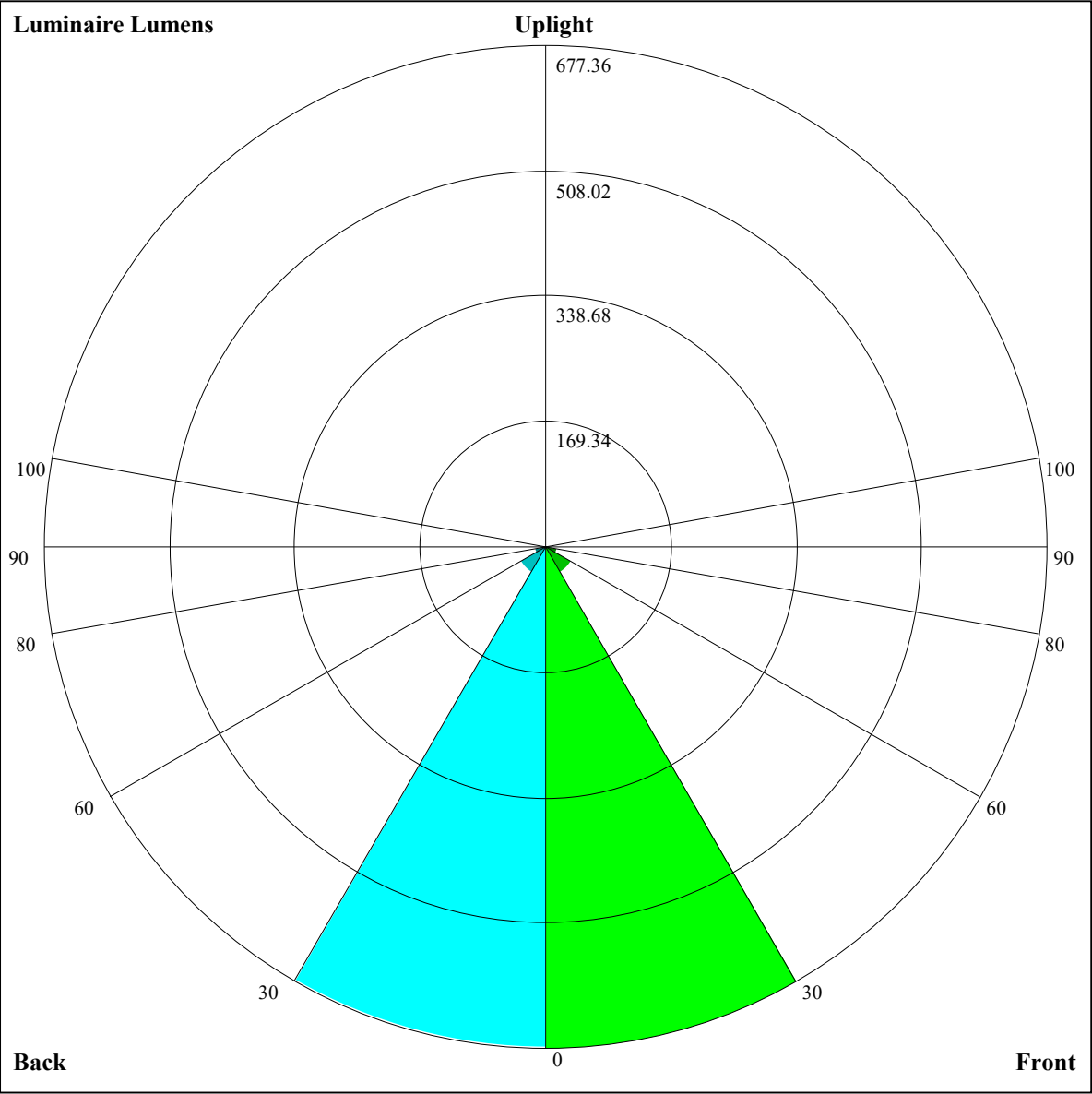
UGR calculation is based on CIE Publ. 117 ,S/H = 0.25



| RHOCC | 80                                     |      |      | 70   |      |      | 50   |      |      | 30   |      |      | 10   |      |      | 0    |
|-------|----------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| RHOW  | 50                                     | 30   | 10   | 50   | 30   | 10   | 50   | 30   | 10   | 50   | 30   | 10   | 50   | 30   | 10   | 0    |
| RCR   | COEFFCIENTS OF UTILIZATION RHOFC=20 CU |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 0     | 1.13                                   | 1.13 | 1.13 | 1.10 | 1.10 | 1.10 | 1.05 | 1.05 | 1.05 | 1.01 | 1.01 | 1.01 | 0.97 | 0.97 | 0.97 | 0.95 |
| 1     | 1.06                                   | 1.05 | 1.03 | 1.04 | 1.03 | 1.01 | 1.01 | 0.99 | 0.98 | 0.97 | 0.96 | 0.95 | 0.94 | 0.93 | 0.92 | 0.91 |
| 2     | 1.01                                   | 0.98 | 0.96 | 1.00 | 0.97 | 0.95 | 0.97 | 0.95 | 0.93 | 0.94 | 0.92 | 0.91 | 0.91 | 0.90 | 0.89 | 0.87 |
| 3     | 0.97                                   | 0.93 | 0.91 | 0.96 | 0.92 | 0.90 | 0.93 | 0.91 | 0.88 | 0.91 | 0.89 | 0.87 | 0.89 | 0.87 | 0.86 | 0.85 |
| 4     | 0.93                                   | 0.89 | 0.86 | 0.92 | 0.89 | 0.86 | 0.90 | 0.87 | 0.85 | 0.89 | 0.86 | 0.84 | 0.87 | 0.85 | 0.83 | 0.82 |
| 5     | 0.90                                   | 0.86 | 0.83 | 0.89 | 0.85 | 0.83 | 0.88 | 0.84 | 0.82 | 0.86 | 0.84 | 0.81 | 0.85 | 0.83 | 0.81 | 0.80 |
| 6     | 0.87                                   | 0.83 | 0.80 | 0.86 | 0.83 | 0.80 | 0.85 | 0.82 | 0.80 | 0.84 | 0.81 | 0.79 | 0.83 | 0.80 | 0.79 | 0.78 |
| 7     | 0.85                                   | 0.81 | 0.78 | 0.84 | 0.80 | 0.78 | 0.83 | 0.80 | 0.77 | 0.82 | 0.79 | 0.77 | 0.81 | 0.79 | 0.77 | 0.76 |
| 8     | 0.82                                   | 0.78 | 0.76 | 0.82 | 0.78 | 0.76 | 0.81 | 0.78 | 0.75 | 0.80 | 0.77 | 0.75 | 0.79 | 0.77 | 0.75 | 0.74 |
| 9     | 0.80                                   | 0.76 | 0.74 | 0.80 | 0.76 | 0.74 | 0.79 | 0.76 | 0.73 | 0.78 | 0.75 | 0.73 | 0.78 | 0.75 | 0.73 | 0.72 |
| 10    | 0.78                                   | 0.74 | 0.72 | 0.78 | 0.74 | 0.72 | 0.77 | 0.74 | 0.72 | 0.77 | 0.74 | 0.72 | 0.76 | 0.73 | 0.71 | 0.71 |







Luminaire Lumens:

FL=677.36,FM=38.92,FH=15.5,FVH=2.41

BL=676.5,BM=38.86,BH=15.43,BVH=2.41

UL=0,UH=0

BUG Rating:B2-U0-G0

## Intensity data(cd)

Appendix Page: 18 Total:20

| C/γ(°) | 0.0     | 1.0     | 2.0     | 3.0     | 4.0     | 5.0     | 6.0     | 7.0     | 8.0     |
|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0.0    | 7588.66 | 7511.39 | 7371.77 | 7182.05 | 6944.38 | 6645.42 | 6286.78 | 5888.17 | 5427.75 |
| 45.0   | 7617.97 | 7525.77 | 7461.29 | 7278.51 | 6952.37 | 6775.98 | 6445.59 | 6062.96 | 5627.05 |
| 90.0   | 7501.79 | 7338.19 | 7107.98 | 6840.46 | 6509.53 | 6124.25 | 5697.93 | 5226.31 | 4713.13 |
| 135.0  | 7622.23 | 7533.77 | 7384.56 | 7185.25 | 6933.19 | 6628.37 | 6263.87 | 5848.20 | 5380.32 |
| 180.0  | 7588.66 | 7602.51 | 7554.55 | 7444.24 | 7277.44 | 7094.66 | 6821.28 | 6428.00 | 6105.60 |
| 225.0  | 7617.97 | 7617.43 | 7556.68 | 7432.52 | 7250.80 | 7008.86 | 6715.77 | 6361.39 | 5959.58 |
| 270.0  | 7501.79 | 7613.17 | 7661.66 | 7648.34 | 7579.60 | 7508.19 | 7253.99 | 7111.18 | 6838.33 |
| 315.0  | 7622.23 | 7648.87 | 7628.09 | 7539.10 | 7400.01 | 7199.64 | 6939.05 | 6630.50 | 6264.93 |
| 360.0  | 7588.66 | 7511.39 | 7371.77 | 7182.05 | 6944.38 | 6645.42 | 6286.78 | 5888.17 | 5427.75 |
| C/γ(°) | 9.0     | 10.0    | 11.0    | 12.0    | 13.0    | 14.0    | 15.0    | 16.0    | 17.0    |
| 0.0    | 4932.15 | 4413.64 | 3890.86 | 3368.62 | 2866.63 | 2395.55 | 1950.04 | 1346.27 | 1034.63 |
| 45.0   | 5150.64 | 4642.78 | 4127.47 | 3612.69 | 3107.50 | 2623.63 | 2178.12 | 1768.85 | 1405.42 |
| 90.0   | 4181.29 | 3643.06 | 3126.68 | 2634.82 | 2179.72 | 1765.12 | 975.37  | 975.37  | 872.94  |
| 135.0  | 4977.45 | 4449.34 | 3800.80 | 3371.82 | 2855.97 | 2368.90 | 1929.26 | 1535.98 | 1195.45 |
| 180.0  | 5666.49 | 5184.21 | 4661.44 | 4118.94 | 3579.65 | 3052.61 | 2557.55 | 2091.26 | 1675.60 |
| 225.0  | 5495.96 | 5008.89 | 4490.91 | 3951.08 | 3422.44 | 2912.46 | 2436.58 | 1991.61 | 1742.74 |
| 270.0  | 6353.39 | 6110.92 | 5659.56 | 5171.42 | 4650.78 | 4118.94 | 3584.45 | 3068.60 | 2583.66 |
| 315.0  | 5841.28 | 5368.06 | 5060.58 | 4313.99 | 3991.58 | 3455.48 | 2748.86 | 2461.09 | 2009.73 |
| 360.0  | 4932.15 | 4413.64 | 3890.86 | 3368.62 | 2866.63 | 2395.55 | 1950.04 | 1346.27 | 1034.63 |
| C/γ(°) | 18.0    | 19.0    | 20.0    | 21.0    | 22.0    | 23.0    | 24.0    | 25.0    | 26.0    |
| 0.0    | 1034.63 | 780.81  | 578.14  | 424.77  | 308.92  | 224.56  | 164.08  | 124.43  | 98.48   |
| 45.0   | 1087.81 | 825.09  | 617.79  | 485.63  | 333.76  | 293.25  | 293.25  | 138.55  | 107.97  |
| 90.0   | 654.45  | 483.71  | 353.10  | 257.12  | 187.37  | 139.57  | 108.13  | 87.56   | 74.66   |
| 135.0  | 911.42  | 682.27  | 505.88  | 368.93  | 266.08  | 266.08  | 194.72  | 105.51  | 92.30   |
| 180.0  | 1310.56 | 999.35  | 747.29  | 552.78  | 405.16  | 295.39  | 295.39  | 277.27  | 132.27  |
| 225.0  | 969.40  | 969.40  | 776.65  | 580.81  | 428.40  | 315.00  | 232.56  | 174.52  | 134.72  |
| 270.0  | 2134.42 | 1731.55 | 1368.65 | 1059.03 | 805.37  | 605.53  | 452.59  | 334.29  | 295.92  |
| 315.0  | 1606.85 | 976.01  | 976.01  | 737.96  | 549.26  | 406.02  | 297.04  | 230.48  | 159.50  |
| 360.0  | 1034.63 | 780.81  | 578.14  | 424.77  | 308.92  | 224.56  | 164.08  | 124.43  | 98.48   |
| C/γ(°) | 27.0    | 28.0    | 29.0    | 30.0    | 31.0    | 32.0    | 33.0    | 34.0    | 35.0    |
| 0.0    | 82.12   | 71.73   | 63.84   | 57.61   | 52.76   | 49.72   | 46.04   | 43.54   | 41.14   |
| 45.0   | 88.09   | 74.82   | 65.97   | 59.63   | 55.05   | 50.79   | 47.06   | 43.96   | 41.57   |
| 90.0   | 66.19   | 59.58   | 54.30   | 50.20   | 46.63   | 44.98   | 42.47   | 39.33   | 38.05   |
| 135.0  | 77.22   | 63.89   | 59.95   | 55.21   | 51.58   | 48.65   | 45.72   | 43.16   | 41.09   |
| 180.0  | 103.76  | 85.16   | 72.53   | 64.00   | 57.98   | 52.92   | 49.19   | 45.72   | 43.11   |
| 225.0  | 107.59  | 88.73   | 75.67   | 66.56   | 59.68   | 54.30   | 50.36   | 46.63   | 44.76   |
| 270.0  | 295.92  | 148.73  | 118.36  | 97.47   | 82.65   | 72.74   | 65.17   | 59.90   | 55.26   |
| 315.0  | 121.93  | 101.94  | 84.30   | 72.90   | 64.69   | 58.19   | 53.02   | 48.71   | 45.83   |
| 360.0  | 82.12   | 71.73   | 63.84   | 57.61   | 52.76   | 49.72   | 46.04   | 43.54   | 41.14   |
| C/γ(°) | 36.0    | 37.0    | 38.0    | 39.0    | 40.0    | 41.0    | 42.0    | 43.0    | 44.0    |
| 0.0    | 38.90   | 37.52   | 36.18   | 34.64   | 33.41   | 32.83   | 31.97   | 31.28   | 30.75   |
| 45.0   | 39.59   | 37.62   | 36.56   | 34.75   | 33.52   | 32.93   | 32.24   | 31.44   | 30.96   |
| 90.0   | 36.40   | 34.96   | 33.84   | 32.77   | 31.71   | 30.91   | 30.27   | 29.68   | 29.15   |
| 135.0  | 39.22   | 37.78   | 36.29   | 35.17   | 33.89   | 32.93   | 32.13   | 31.60   | 31.12   |
| 180.0  | 40.98   | 38.69   | 36.93   | 35.28   | 33.89   | 32.99   | 32.03   | 31.23   | 30.64   |
| 225.0  | 41.03   | 39.65   | 37.78   | 36.29   | 34.80   | 33.57   | 32.67   | 31.81   | 31.23   |
| 270.0  | 51.00   | 47.43   | 44.60   | 42.37   | 40.18   | 38.48   | 37.04   | 36.34   | 34.96   |
| 315.0  | 43.22   | 40.61   | 38.32   | 36.45   | 35.17   | 34.11   | 33.09   | 32.24   | 31.55   |
| 360.0  | 38.90   | 37.52   | 36.18   | 34.64   | 33.41   | 32.83   | 31.97   | 31.28   | 30.75   |

## Intensity data(cd)

Appendix Page: 19 Total:20

| C/ $\gamma$ (°) | 45.0  | 46.0  | 47.0  | 48.0  | 49.0  | 50.0  | 51.0  | 52.0  | 53.0  |
|-----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0.0             | 30.27 | 29.90 | 29.68 | 29.63 | 29.68 | 29.42 | 29.26 | 29.10 | 28.88 |
| 45.0            | 30.48 | 30.16 | 29.84 | 29.68 | 29.52 | 29.36 | 29.26 | 29.04 | 28.72 |
| 90.0            | 28.78 | 28.46 | 28.08 | 27.87 | 27.66 | 27.60 | 27.44 | 26.96 | 26.59 |
| 135.0           | 30.85 | 30.59 | 30.43 | 30.32 | 30.06 | 30.00 | 29.84 | 29.68 | 29.31 |
| 180.0           | 30.16 | 29.95 | 29.58 | 29.42 | 29.36 | 29.15 | 29.04 | 28.94 | 28.78 |
| 225.0           | 30.75 | 30.32 | 29.90 | 29.52 | 29.31 | 29.10 | 28.83 | 28.67 | 28.40 |
| 270.0           | 34.05 | 33.68 | 32.88 | 32.40 | 31.97 | 31.49 | 31.23 | 30.96 | 30.75 |
| 315.0           | 31.01 | 30.59 | 30.16 | 29.90 | 29.68 | 29.52 | 29.20 | 29.04 | 28.88 |
| 360.0           | 30.27 | 29.90 | 29.68 | 29.63 | 29.68 | 29.42 | 29.26 | 29.10 | 28.88 |
| C/ $\gamma$ (°) | 54.0  | 55.0  | 56.0  | 57.0  | 58.0  | 59.0  | 60.0  | 61.0  | 62.0  |
| 0.0             | 28.30 | 27.76 | 27.34 | 26.33 | 25.85 | 24.89 | 23.93 | 23.02 | 21.90 |
| 45.0            | 28.35 | 27.87 | 27.28 | 26.54 | 25.74 | 24.89 | 24.09 | 22.86 | 22.06 |
| 90.0            | 26.22 | 25.31 | 24.57 | 23.50 | 22.54 | 21.69 | 20.78 | 19.88 | 19.08 |
| 135.0           | 28.88 | 28.24 | 27.55 | 26.75 | 25.79 | 24.83 | 23.87 | 22.86 | 21.80 |
| 180.0           | 28.56 | 28.14 | 27.76 | 27.07 | 26.33 | 25.47 | 24.62 | 23.61 | 22.54 |
| 225.0           | 27.98 | 27.44 | 27.12 | 26.43 | 25.26 | 24.78 | 23.87 | 22.97 | 22.06 |
| 270.0           | 30.54 | 30.16 | 29.74 | 29.31 | 28.72 | 28.03 | 27.23 | 26.75 | 25.47 |
| 315.0           | 28.67 | 28.24 | 27.71 | 27.12 | 26.43 | 25.79 | 24.89 | 23.87 | 23.02 |
| 360.0           | 28.30 | 27.76 | 27.34 | 26.33 | 25.85 | 24.89 | 23.93 | 23.02 | 21.90 |
| C/ $\gamma$ (°) | 63.0  | 64.0  | 65.0  | 66.0  | 67.0  | 68.0  | 69.0  | 70.0  | 71.0  |
| 0.0             | 20.89 | 19.93 | 19.02 | 18.28 | 17.37 | 16.41 | 15.51 | 14.44 | 13.54 |
| 45.0            | 21.05 | 19.93 | 19.24 | 18.44 | 17.64 | 16.73 | 15.72 | 14.81 | 13.91 |
| 90.0            | 18.33 | 17.69 | 16.84 | 15.99 | 15.13 | 14.28 | 13.32 | 12.52 | 11.62 |
| 135.0           | 20.73 | 19.77 | 18.86 | 18.01 | 17.11 | 16.25 | 15.67 | 14.34 | 13.80 |
| 180.0           | 21.58 | 20.68 | 20.09 | 18.70 | 18.28 | 17.64 | 17.00 | 16.04 | 14.92 |
| 225.0           | 21.10 | 20.09 | 19.24 | 18.33 | 17.59 | 16.73 | 15.88 | 15.03 | 14.02 |
| 270.0           | 24.46 | 23.93 | 22.54 | 21.58 | 21.00 | 20.09 | 19.24 | 18.28 | 17.48 |
| 315.0           | 22.12 | 21.16 | 20.14 | 19.29 | 18.60 | 18.17 | 17.05 | 16.57 | 15.61 |
| 360.0           | 20.89 | 19.93 | 19.02 | 18.28 | 17.37 | 16.41 | 15.51 | 14.44 | 13.54 |
| C/ $\gamma$ (°) | 72.0  | 73.0  | 74.0  | 75.0  | 76.0  | 77.0  | 78.0  | 79.0  | 80.0  |
| 0.0             | 12.63 | 11.72 | 10.82 | 10.07 | 9.27  | 8.74  | 7.94  | 7.25  | 6.50  |
| 45.0            | 13.00 | 11.99 | 11.19 | 10.44 | 9.59  | 8.79  | 7.99  | 7.35  | 6.55  |
| 90.0            | 10.71 | 10.02 | 9.22  | 8.74  | 7.62  | 7.19  | 6.50  | 5.54  | 5.22  |
| 135.0           | 12.84 | 11.83 | 10.98 | 10.18 | 9.43  | 8.58  | 7.73  | 7.09  | 6.29  |
| 180.0           | 13.86 | 12.84 | 11.94 | 11.03 | 10.28 | 9.49  | 8.69  | 7.89  | 7.30  |
| 225.0           | 13.11 | 12.20 | 11.30 | 10.55 | 9.81  | 9.22  | 8.21  | 7.62  | 7.03  |
| 270.0           | 16.41 | 15.35 | 14.34 | 13.38 | 12.36 | 11.46 | 10.66 | 9.86  | 9.01  |
| 315.0           | 14.07 | 13.48 | 12.52 | 11.56 | 10.76 | 9.97  | 9.17  | 8.37  | 7.62  |
| 360.0           | 12.63 | 11.72 | 10.82 | 10.07 | 9.27  | 8.74  | 7.94  | 7.25  | 6.50  |
| C/ $\gamma$ (°) | 81.0  | 82.0  | 83.0  | 84.0  | 85.0  | 86.0  | 87.0  | 88.0  | 89.0  |
| 0.0             | 5.65  | 5.22  | 4.80  | 4.26  | 3.94  | 3.36  | 3.09  | 2.72  | 2.45  |
| 45.0            | 5.86  | 5.38  | 4.80  | 4.42  | 3.84  | 3.46  | 3.04  | 2.77  | 2.40  |
| 90.0            | 4.58  | 4.21  | 3.78  | 3.41  | 2.98  | 2.66  | 2.40  | 2.24  | 2.13  |
| 135.0           | 5.70  | 5.17  | 4.58  | 4.10  | 3.73  | 3.30  | 2.93  | 2.66  | 2.50  |
| 180.0           | 6.61  | 5.97  | 5.33  | 4.90  | 4.37  | 4.00  | 3.52  | 3.20  | 2.82  |
| 225.0           | 6.34  | 5.81  | 5.38  | 4.85  | 4.42  | 3.89  | 3.57  | 3.20  | 2.88  |
| 270.0           | 8.21  | 7.62  | 6.61  | 5.97  | 5.60  | 4.96  | 4.58  | 4.10  | 3.68  |
| 315.0           | 6.98  | 6.39  | 5.65  | 5.12  | 4.74  | 4.26  | 3.78  | 3.41  | 3.09  |
| 360.0           | 5.65  | 5.22  | 4.80  | 4.26  | 3.94  | 3.36  | 3.09  | 2.72  | 2.45  |

Intensity data(cd)

|                       |      |
|-----------------------|------|
| C/ $\gamma(^{\circ})$ | 90.0 |
| 0.0                   | 2.34 |
| 45.0                  | 2.29 |
| 90.0                  | 2.13 |
| 135.0                 | 2.40 |
| 180.0                 | 2.56 |
| 225.0                 | 2.72 |
| 270.0                 | 3.36 |
| 315.0                 | 2.88 |
| 360.0                 | 2.34 |