



NATA LIGHTING CO.,LED  
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Address:380 JinOu Road, JiangMen City, GuangDong, China 529040

NT

Client: NT

LumCAT: 1-1586-L

Luminaire: 92.70.410.00 LED HOLDER

Report No: 20250321-B004

Ballast type: DC

Test No: 20250321-C004

Voltage(V): 34.890

LampCAT: LUMILEDS LUXEON COB 1203 Current(A): 0.300

Lamp flux(lm): 1702.5 Power (W): 10.467

Number of Lamps: 1 PF: 0.000

Length(mm): 50 Width(mm): 50

Phm Type: C Height(mm): 33

#### Photometric Results

Lumens(lm): 1615.47, Efficiency(%): 94.89% , Luminous Efficacy(lm/W): 154.34

Central intensity(cd): 2655.224, Maximum intensity(cd): 2677.463

Angle of maximum intensity: C=270.0  $\gamma$ =3.0

Beam Angle(50%Imax): [C0/180]Total=48.6

[C90/270]Total=47.6

Field angle(10%Imax): [C0/180]Total=68.0

[C90/270]Total=68.0

Maximum s/h(1/2): C0\_180=0.82 C90\_270=0.77

Maximum s/h(1/4): C0\_180=0.77 C90\_270=0.72

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 94.77%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 98.461%

| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 0.0                | 2657.199      | 0.000       | 0         | 0.00%       | 0.00%      |
| 1.0                | 2656.102      | 2.542       | 2.542     | 0.15%       | 0.16%      |
| 2.0                | 2653.542      | 7.621       | 10.163    | 0.45%       | 0.63%      |
| 3.0                | 2646.373      | 12.676      | 22.839    | 0.74%       | 1.41%      |
| 4.0                | 2628.523      | 17.657      | 40.496    | 1.04%       | 2.51%      |
| 5.0                | 2606.797      | 22.522      | 63.018    | 1.32%       | 3.90%      |
| 6.0                | 2593.483      | 27.329      | 90.347    | 1.61%       | 5.59%      |
| 7.0                | 2580.754      | 32.116      | 122.463   | 1.89%       | 7.58%      |
| 8.0                | 2562.832      | 36.812      | 159.275   | 2.16%       | 9.86%      |
| 9.0                | 2536.863      | 41.330      | 200.605   | 2.43%       | 12.42%     |
| 10.0               | 2500.798      | 45.589      | 246.194   | 2.68%       | 15.24%     |
| 11.0               | 2464.002      | 49.609      | 295.802   | 2.91%       | 18.31%     |
| 12.0               | 2417.257      | 53.359      | 349.162   | 3.13%       | 21.61%     |
| 13.0               | 2366.782      | 56.774      | 405.936   | 3.33%       | 25.13%     |
| 14.0               | 2313.233      | 59.904      | 465.84    | 3.52%       | 28.84%     |
| 15.0               | 2247.469      | 62.611      | 528.451   | 3.68%       | 32.71%     |
| 16.0               | 2183.752      | 64.930      | 593.381   | 3.81%       | 36.73%     |
| 17.0               | 2102.552      | 66.749      | 660.13    | 3.92%       | 40.86%     |
| 18.0               | 2013.891      | 67.871      | 728.002   | 3.99%       | 45.06%     |
| 19.0               | 1909.575      | 68.260      | 796.262   | 4.01%       | 49.29%     |
| 20.0               | 1804.015      | 67.969      | 864.231   | 3.99%       | 53.50%     |
| 21.0               | 1695.016      | 67.188      | 931.419   | 3.95%       | 57.66%     |
| 22.0               | 1586.311      | 65.940      | 997.359   | 3.87%       | 61.74%     |
| 23.0               | 1471.826      | 64.168      | 1061.527  | 3.77%       | 65.71%     |
| 24.0               | 1295.776      | 60.510      | 1122.037  | 3.55%       | 69.46%     |
| 25.0               | 1239.521      | 57.647      | 1179.684  | 3.39%       | 73.02%     |
| 26.0               | 1157.999      | 56.594      | 1236.277  | 3.32%       | 76.53%     |
| 27.0               | 1045.921      | 53.919      | 1290.197  | 3.17%       | 79.87%     |
| 28.0               | 925.863       | 49.921      | 1340.118  | 2.93%       | 82.96%     |
| 29.0               | 794.150       | 45.000      | 1385.119  | 2.64%       | 85.74%     |
| 30.0               | 664.004       | 39.370      | 1424.489  | 2.31%       | 88.18%     |
| 31.0               | 537.434       | 33.434      | 1457.923  | 1.96%       | 90.25%     |
| 32.0               | 425.759       | 27.594      | 1485.517  | 1.62%       | 91.96%     |
| 33.0               | 316.812       | 21.876      | 1507.394  | 1.28%       | 93.31%     |
| 34.0               | 239.379       | 16.832      | 1524.226  | 0.99%       | 94.35%     |
| 35.0               | 208.304       | 13.903      | 1538.129  | 0.82%       | 95.21%     |
| 36.0               | 96.584        | 9.708       | 1547.837  | 0.57%       | 95.81%     |
| 37.0               | 62.290        | 5.182       | 1553.018  | 0.30%       | 96.13%     |

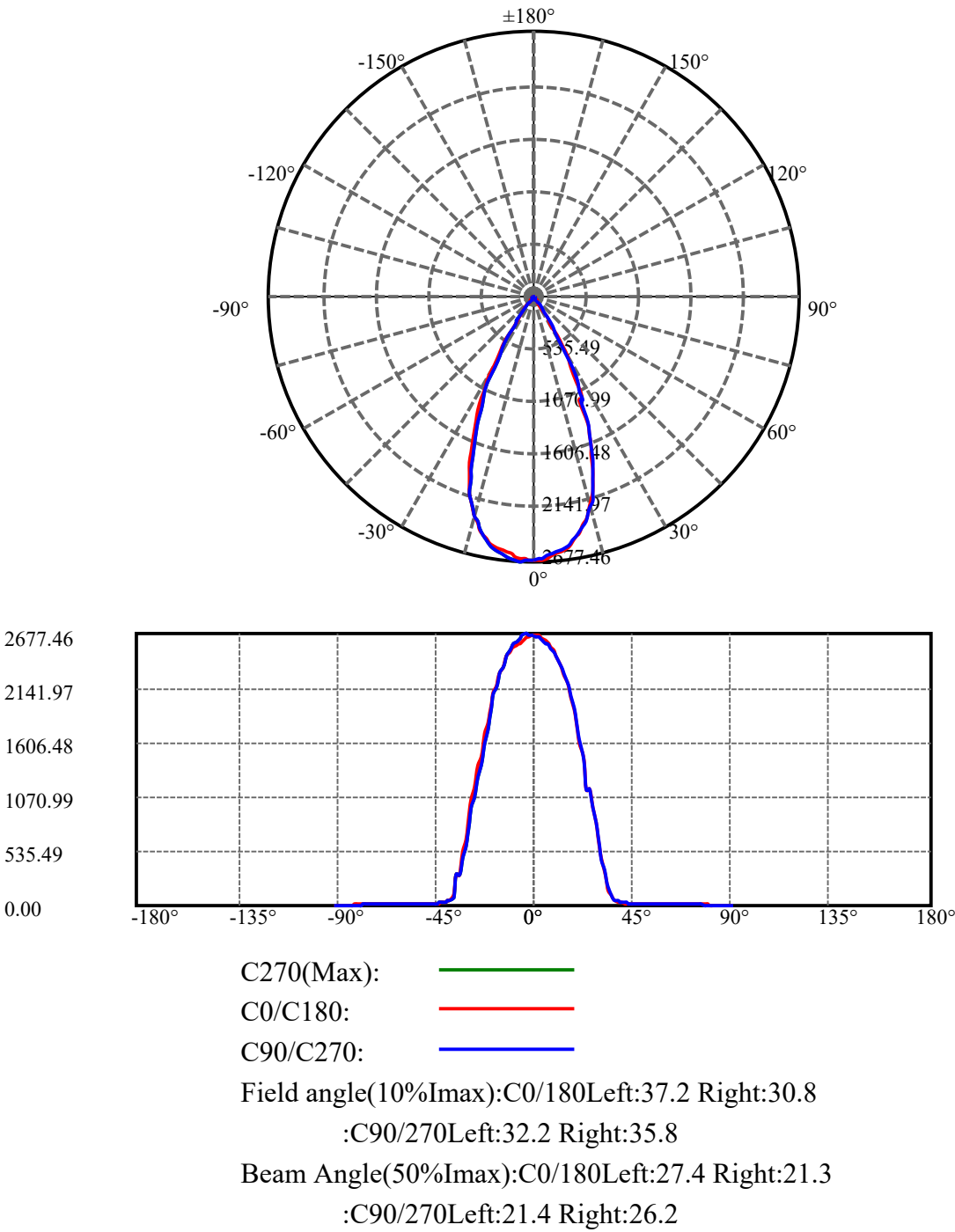
| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 38.0               | 46.101        | 3.618       | 1556.636  | 0.21%       | 96.36%     |
| 39.0               | 38.866        | 2.900       | 1559.536  | 0.17%       | 96.54%     |
| 40.0               | 33.468        | 2.523       | 1562.059  | 0.15%       | 96.69%     |
| 41.0               | 28.815        | 2.218       | 1564.277  | 0.13%       | 96.83%     |
| 42.0               | 25.238        | 1.964       | 1566.241  | 0.12%       | 96.95%     |
| 43.0               | 22.743        | 1.777       | 1568.018  | 0.10%       | 97.06%     |
| 44.0               | 20.929        | 1.648       | 1569.666  | 0.10%       | 97.16%     |
| 45.0               | 19.451        | 1.552       | 1571.218  | 0.09%       | 97.26%     |
| 46.0               | 18.164        | 1.471       | 1572.689  | 0.09%       | 97.35%     |
| 47.0               | 17.059        | 1.401       | 1574.09   | 0.08%       | 97.44%     |
| 48.0               | 16.189        | 1.344       | 1575.434  | 0.08%       | 97.52%     |
| 49.0               | 15.377        | 1.296       | 1576.731  | 0.08%       | 97.60%     |
| 50.0               | 14.594        | 1.250       | 1577.98   | 0.07%       | 97.68%     |
| 51.0               | 13.921        | 1.206       | 1579.187  | 0.07%       | 97.75%     |
| 52.0               | 13.263        | 1.166       | 1580.353  | 0.07%       | 97.83%     |
| 53.0               | 12.707        | 1.130       | 1581.483  | 0.07%       | 97.90%     |
| 54.0               | 12.217        | 1.099       | 1582.581  | 0.06%       | 97.96%     |
| 55.0               | 11.756        | 1.070       | 1583.651  | 0.06%       | 98.03%     |
| 56.0               | 11.302        | 1.042       | 1584.693  | 0.06%       | 98.09%     |
| 57.0               | 10.929        | 1.016       | 1585.71   | 0.06%       | 98.16%     |
| 58.0               | 10.651        | 0.998       | 1586.708  | 0.06%       | 98.22%     |
| 59.0               | 10.366        | 0.983       | 1587.69   | 0.06%       | 98.28%     |
| 60.0               | 10.132        | 0.968       | 1588.659  | 0.06%       | 98.34%     |
| 61.0               | 9.978         | 0.960       | 1589.618  | 0.06%       | 98.40%     |
| 62.0               | 9.846         | 0.955       | 1590.573  | 0.06%       | 98.46%     |
| 63.0               | 9.729         | 0.952       | 1591.526  | 0.06%       | 98.52%     |
| 64.0               | 9.583         | 0.948       | 1592.473  | 0.06%       | 98.58%     |
| 65.0               | 9.437         | 0.941       | 1593.414  | 0.06%       | 98.63%     |
| 66.0               | 9.261         | 0.933       | 1594.347  | 0.05%       | 98.69%     |
| 67.0               | 9.093         | 0.923       | 1595.27   | 0.05%       | 98.75%     |
| 68.0               | 8.969         | 0.915       | 1596.185  | 0.05%       | 98.81%     |
| 69.0               | 8.903         | 0.912       | 1597.097  | 0.05%       | 98.86%     |
| 70.0               | 8.837         | 0.911       | 1598.008  | 0.05%       | 98.92%     |
| 71.0               | 8.764         | 0.910       | 1598.918  | 0.05%       | 98.98%     |
| 72.0               | 8.698         | 0.908       | 1599.826  | 0.05%       | 99.03%     |
| 73.0               | 8.639         | 0.907       | 1600.732  | 0.05%       | 99.09%     |
| 74.0               | 8.559         | 0.904       | 1601.636  | 0.05%       | 99.14%     |
| 75.0               | 8.500         | 0.901       | 1602.538  | 0.05%       | 99.20%     |

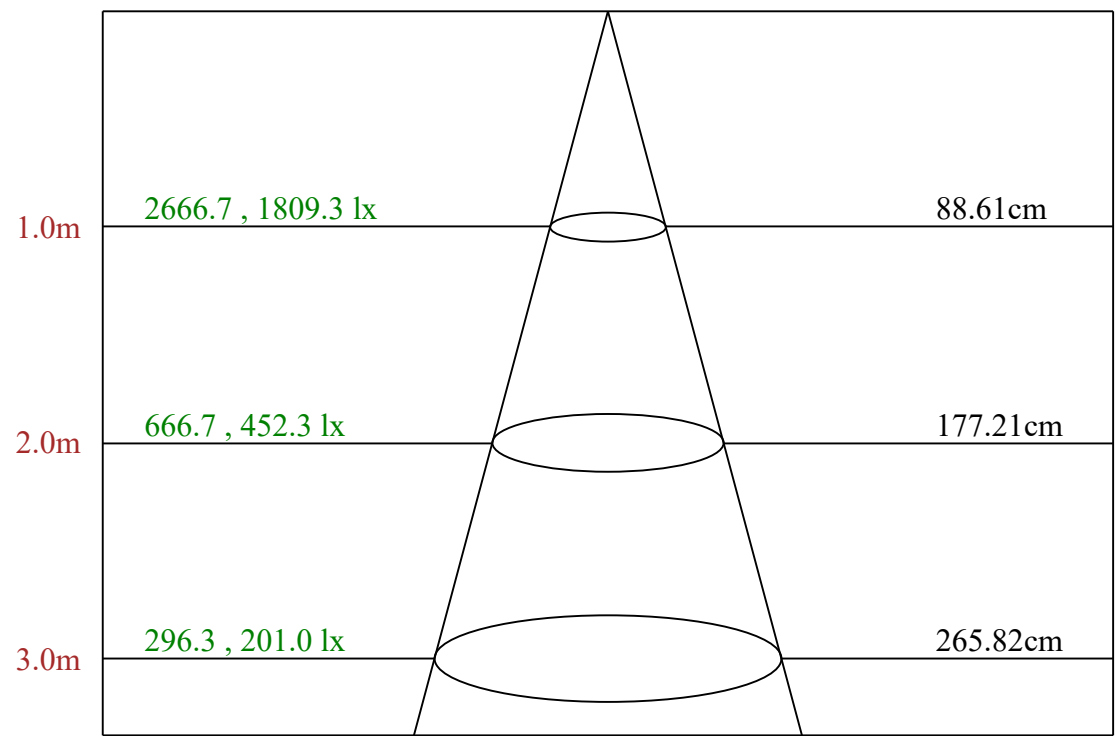
| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 76.0               | 8.427         | 0.899       | 1603.436  | 0.05%       | 99.26%     |
| 77.0               | 8.369         | 0.895       | 1604.332  | 0.05%       | 99.31%     |
| 78.0               | 8.318         | 0.893       | 1605.225  | 0.05%       | 99.37%     |
| 79.0               | 8.252         | 0.890       | 1606.115  | 0.05%       | 99.42%     |
| 80.0               | 8.186         | 0.886       | 1607.002  | 0.05%       | 99.48%     |
| 81.0               | 8.120         | 0.882       | 1607.883  | 0.05%       | 99.53%     |
| 82.0               | 8.047         | 0.877       | 1608.76   | 0.05%       | 99.58%     |
| 83.0               | 7.974         | 0.871       | 1609.631  | 0.05%       | 99.64%     |
| 84.0               | 7.886         | 0.864       | 1610.495  | 0.05%       | 99.69%     |
| 85.0               | 7.762         | 0.854       | 1611.349  | 0.05%       | 99.75%     |
| 86.0               | 7.637         | 0.842       | 1612.191  | 0.05%       | 99.80%     |
| 87.0               | 7.557         | 0.832       | 1613.022  | 0.05%       | 99.85%     |
| 88.0               | 7.476         | 0.823       | 1613.846  | 0.05%       | 99.90%     |
| 89.0               | 7.396         | 0.815       | 1614.661  | 0.05%       | 99.95%     |
| 90.0               | 7.330         | 0.807       | 1615.468  | 0.05%       | 100.00%    |

| ZONAL LUMEN SUMMARY |         |        |         |
|---------------------|---------|--------|---------|
| Zone                | Lumens  | %Lamp  | %Fixt   |
| 0-30                | 1424.49 | 83.67% | 88.18%  |
| 0-40                | 1562.06 | 91.75% | 96.69%  |
| 0-60                | 1588.66 | 93.31% | 98.34%  |
| 0-90                | 1614.66 | 94.84% | 99.95%  |
| 0-120               | 1614.66 | 94.84% | 99.95%  |
| 0-180               | 1615.47 | 94.89% | 100.00% |
| 60-90               | 26.00   | 1.53%  | 1.61%   |
| 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%   |
| 0-27.04             | 1292.38 | 75.91% | 80.00%  |

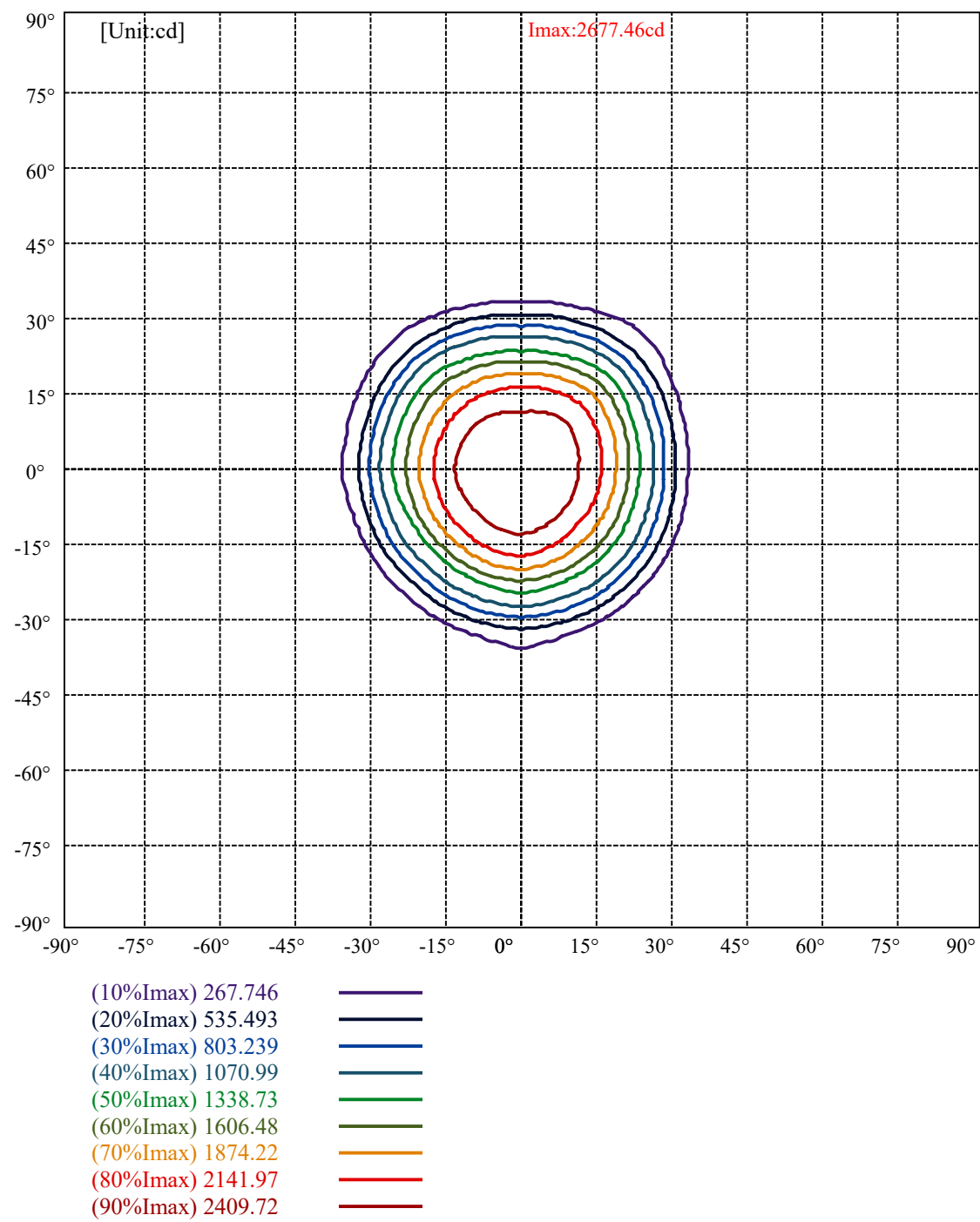
ZONAL LUMEN SUMMARY

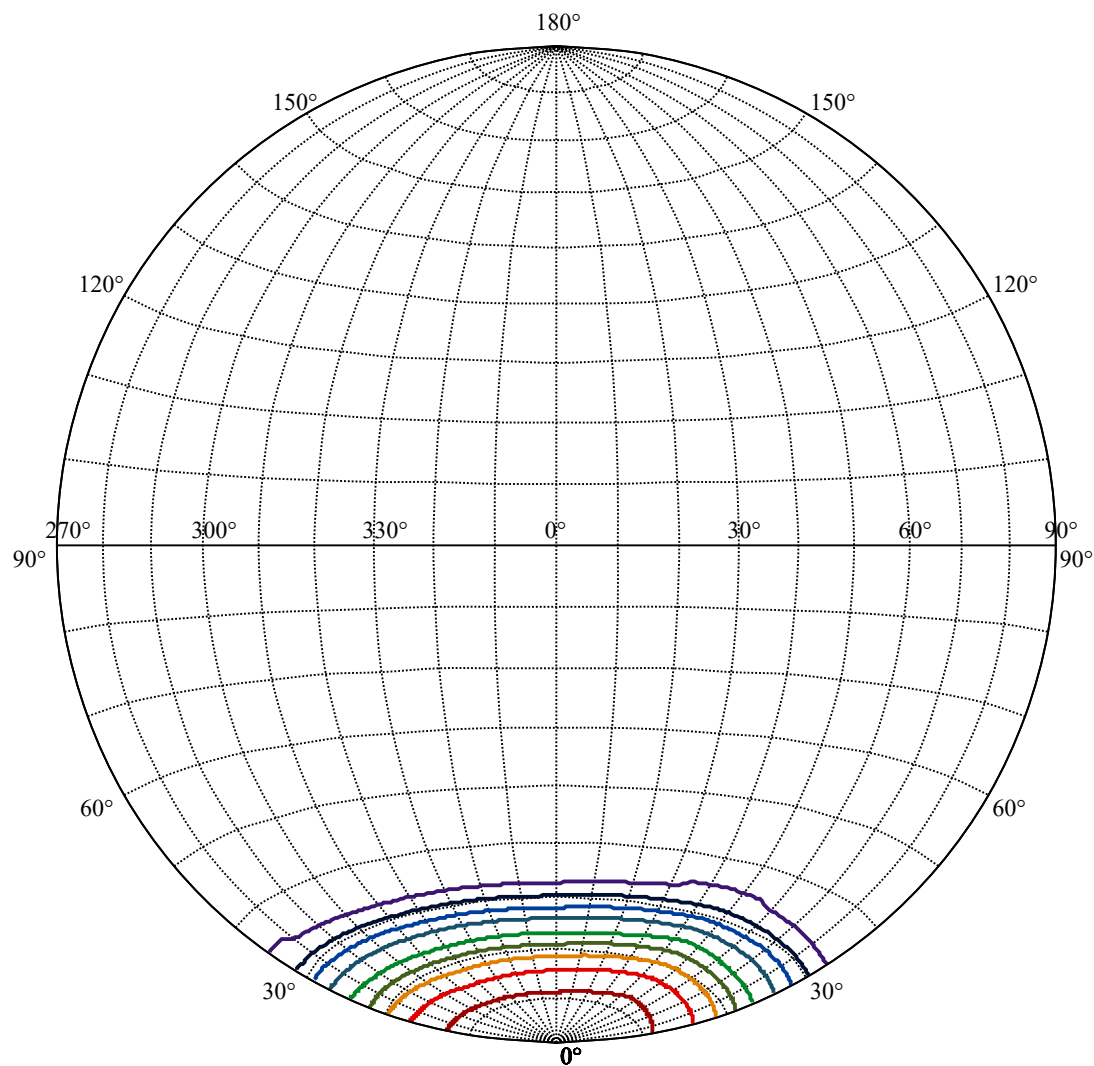
|         |        |
|---------|--------|
| 0-10    | 246.19 |
| 10-20   | 618.04 |
| 20-30   | 560.26 |
| 30-40   | 137.57 |
| 40-50   | 15.92  |
| 50-60   | 10.68  |
| 60-70   | 9.35   |
| 70-80   | 8.99   |
| 80-90   | 7.66   |
| 90-100  | 0.00   |
| 100-110 | 0.00   |
| 110-120 | 0.00   |
| 120-130 | 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 47.79





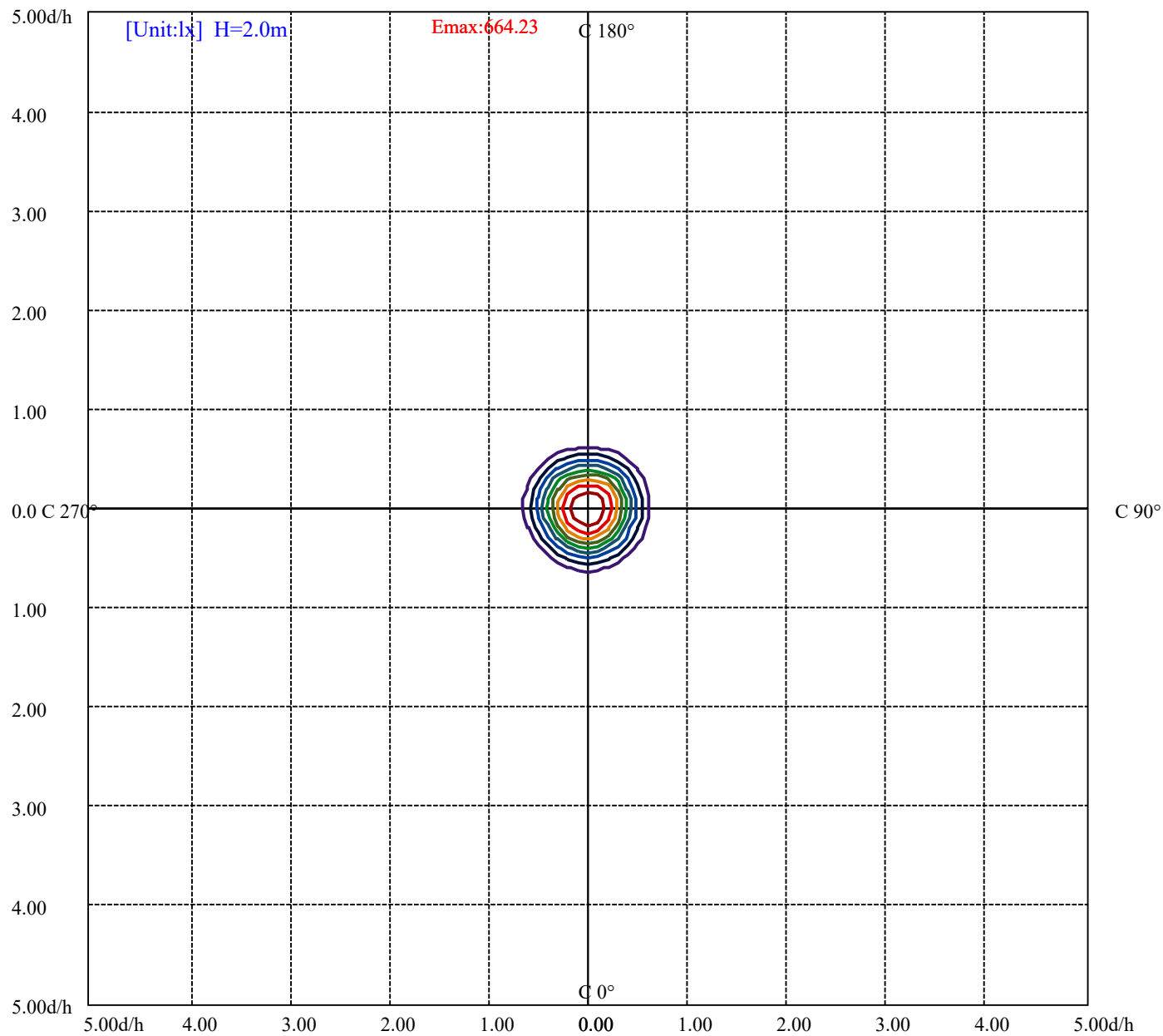
House

[Unit:cd]

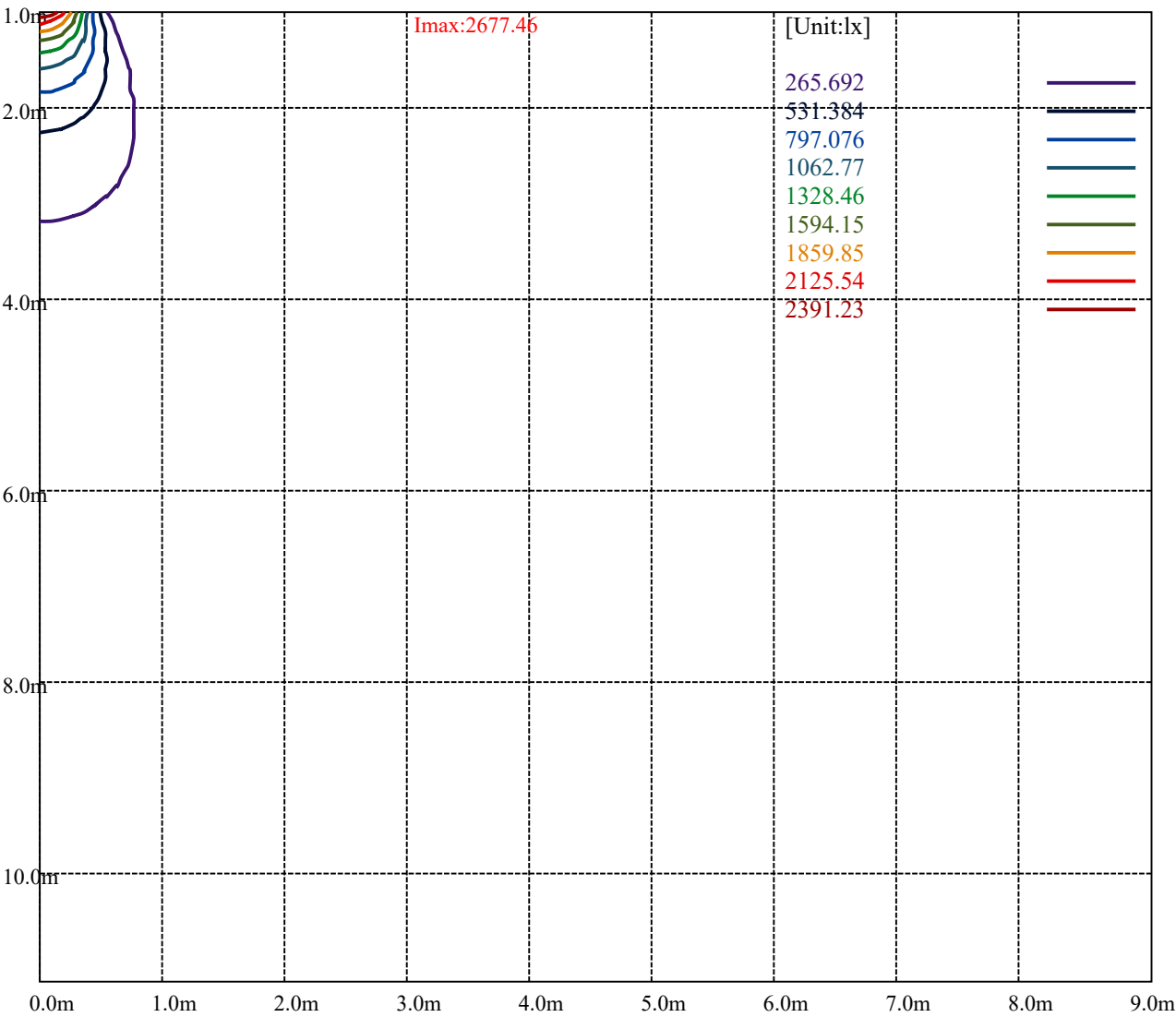
Road

Imax:2677.46

|           |         |   |
|-----------|---------|---|
| (10%Imax) | 268.033 | — |
| (20%Imax) | 536.066 | — |
| (30%Imax) | 804.099 | — |
| (40%Imax) | 1072.13 | — |
| (50%Imax) | 1340.17 | — |
| (60%Imax) | 1608.2  | — |
| (70%Imax) | 1876.23 | — |
| (80%Imax) | 2144.26 | — |
| (90%Imax) | 2412.3  | — |



|           |          |  |
|-----------|----------|--|
| (10%Emax) | 66.423   |  |
| (20%Emax) | 132.846  |  |
| (30%Emax) | 199.269  |  |
| (40%Emax) | 265.6925 |  |
| (50%Emax) | 332.115  |  |
| (60%Emax) | 398.5375 |  |
| (70%Emax) | 464.96   |  |
| (80%Emax) | 531.385  |  |
| (90%Emax) | 597.8075 |  |



Luminance Table

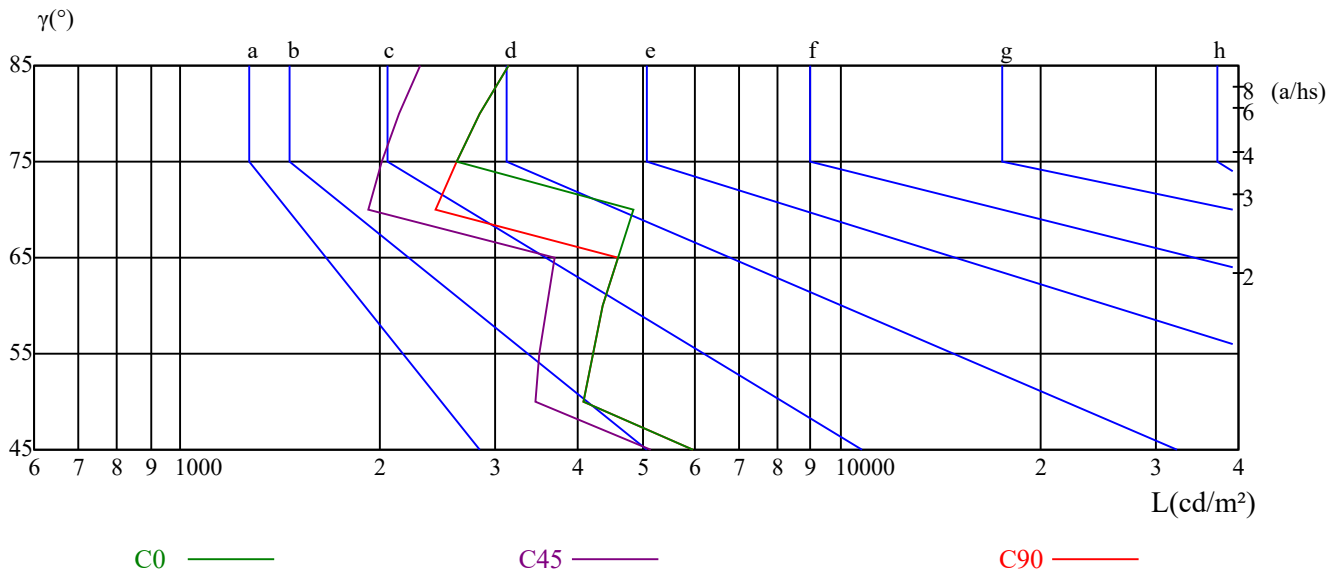
| $\gamma$ | 45   | 50   | 55   | 60   | 65   | 70   | 75   | 80   | 85   |
|----------|------|------|------|------|------|------|------|------|------|
| C0       | 5983 | 4077 | 4202 | 4369 | 4586 | 4866 | 2612 | 2842 | 3144 |
| C45      | 5137 | 3448 | 3499 | 3578 | 3691 | 1920 | 2017 | 2142 | 2302 |
| C90      | 5983 | 4077 | 4202 | 4369 | 4586 | 2433 | 2612 | 2842 | 3144 |

| L(Hor)(65) | L(Ver)(65) | L45(65) | L(Hor)(75) | L(Ver)(75) | L45(75) | L(Hor)(85) | L(Ver)(85) | L45(85) |
|------------|------------|---------|------------|------------|---------|------------|------------|---------|
| 11078      | 11078      | 11078   | 13567      | 9045       | 9045    | 26859      | 26859      | 26859   |

Glare Table

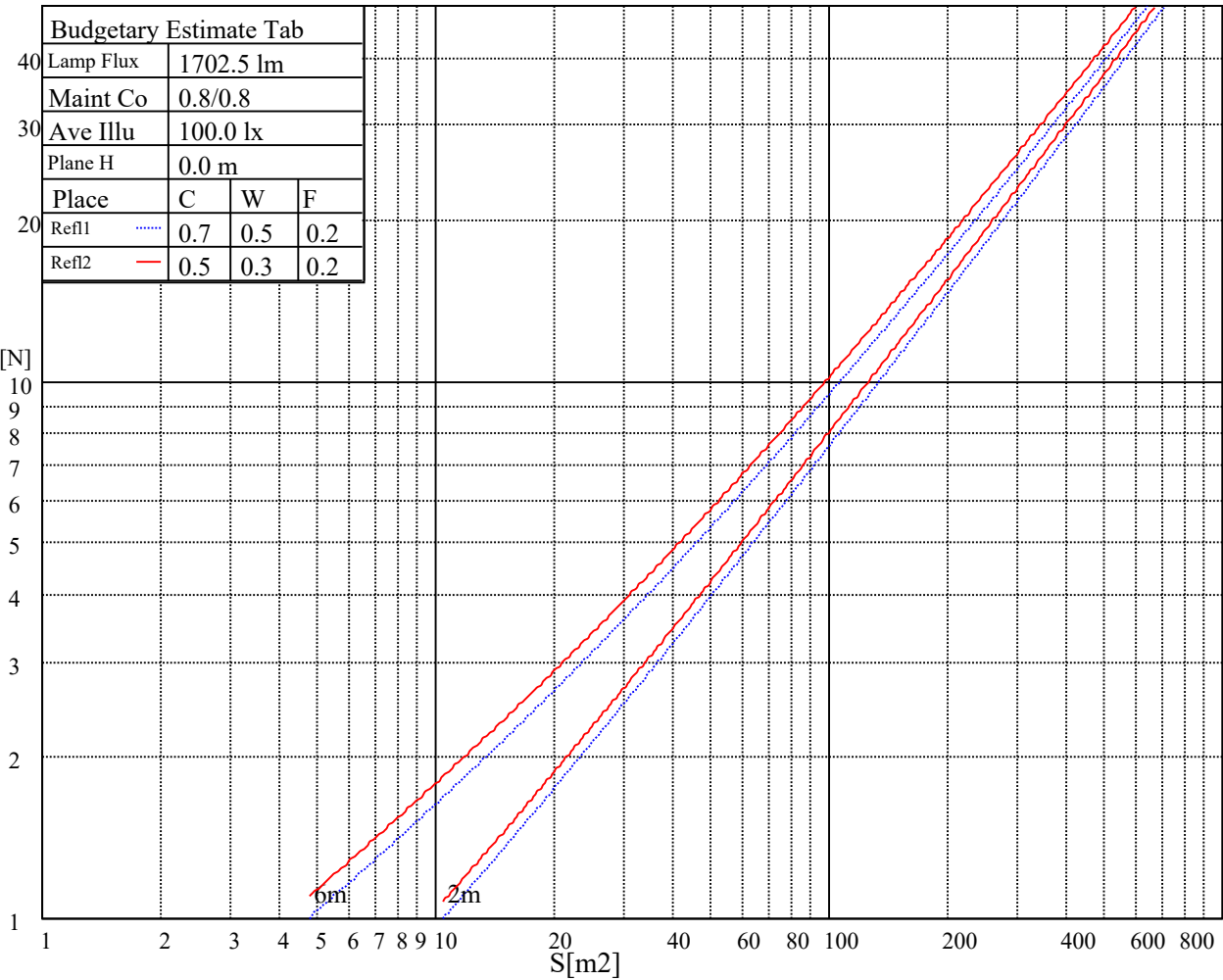
| Glare | Quality | Service Values Illuminance(lx) |      |      |            |            |            |            |            |
|-------|---------|--------------------------------|------|------|------------|------------|------------|------------|------------|
| 1.15  | A       | 2000                           | 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

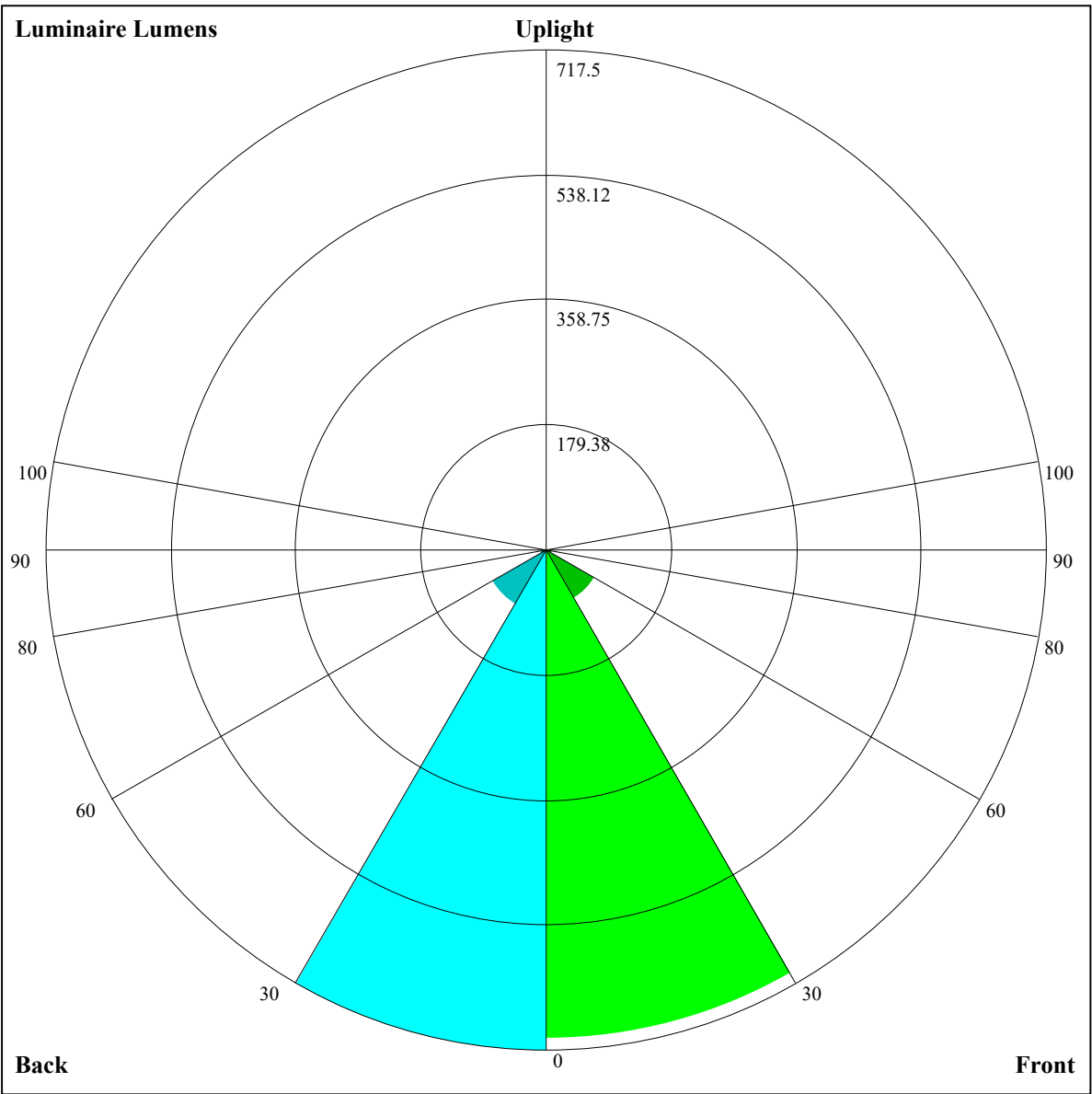


| Illumination assessment according UGR             |     |                  |       |       |       |       |                |       |       |       |       |
|---------------------------------------------------|-----|------------------|-------|-------|-------|-------|----------------|-------|-------|-------|-------|
| 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  | 13.71            | 14.64 | 14.07 | 14.95 | 15.26 | 13.83          | 14.76 | 14.19 | 15.07 | 15.38 |
|                                                   | 3H  | 13.89            | 14.72 | 14.27 | 15.05 | 15.40 | 13.98          | 14.81 | 14.37 | 15.15 | 15.49 |
|                                                   | 4H  | 14.11            | 14.88 | 14.51 | 15.23 | 15.60 | 14.18          | 14.95 | 14.58 | 15.30 | 15.67 |
|                                                   | 6H  | 14.48            | 15.18 | 14.90 | 15.56 | 15.96 | 14.52          | 15.22 | 14.94 | 15.60 | 16.00 |
|                                                   | 8H  | 14.70            | 15.36 | 15.12 | 15.75 | 16.16 | 14.72          | 15.39 | 15.15 | 15.78 | 16.19 |
|                                                   | 12H | 14.94            | 15.57 | 15.37 | 15.97 | 16.39 | 14.96          | 15.59 | 15.38 | 15.98 | 16.40 |
| 4H                                                | 2H  | 13.51            | 14.28 | 13.91 | 14.63 | 15.00 | 13.63          | 14.39 | 14.03 | 14.75 | 15.12 |
|                                                   | 3H  | 13.82            | 14.47 | 14.25 | 14.86 | 15.28 | 13.90          | 14.55 | 14.33 | 14.94 | 15.36 |
|                                                   | 4H  | 14.23            | 14.79 | 14.67 | 15.22 | 15.67 | 14.29          | 14.84 | 14.72 | 15.27 | 15.72 |
|                                                   | 6H  | 14.77            | 15.27 | 15.25 | 15.72 | 16.17 | 14.80          | 15.29 | 15.27 | 15.74 | 16.19 |
|                                                   | 8H  | 15.14            | 15.60 | 15.63 | 16.05 | 16.53 | 15.14          | 15.60 | 15.63 | 16.06 | 16.53 |
|                                                   | 12H | 15.55            | 15.97 | 16.04 | 16.42 | 16.95 | 15.54          | 15.96 | 16.03 | 16.41 | 16.93 |
| 8H                                                | 4H  | 14.28            | 14.74 | 14.77 | 15.20 | 15.67 | 14.33          | 14.79 | 14.82 | 15.25 | 15.72 |
|                                                   | 6H  | 15.01            | 15.38 | 15.52 | 15.86 | 16.37 | 15.02          | 15.40 | 15.53 | 15.88 | 16.39 |
|                                                   | 8H  | 15.56            | 15.87 | 16.10 | 16.40 | 16.89 | 15.56          | 15.87 | 16.09 | 16.39 | 16.89 |
|                                                   | 12H | 16.15            | 16.38 | 16.69 | 16.90 | 17.42 | 16.12          | 16.36 | 16.67 | 16.88 | 17.40 |
| 12H                                               | 4H  | 14.29            | 14.71 | 14.78 | 15.17 | 15.69 | 14.34          | 14.76 | 14.83 | 15.22 | 15.74 |
|                                                   | 6H  | 15.12            | 15.43 | 15.66 | 15.96 | 16.45 | 15.14          | 15.45 | 15.67 | 15.97 | 16.47 |
|                                                   | 8H  | 15.70            | 15.94 | 16.25 | 16.46 | 16.98 | 15.70          | 15.94 | 16.24 | 16.45 | 16.98 |
| Variation with the observer position at spacings: |     |                  |       |       |       |       |                |       |       |       |       |
| S = 1.0H                                          |     | 5.5/-4.1         |       |       |       |       | 5.5/-4.1       |       |       |       |       |
| S = 1.5H                                          |     | 7.3/-3.0         |       |       |       |       | 7.3/-3.1       |       |       |       |       |
| S = 2.0H                                          |     | 8.6/-2.4         |       |       |       |       | 8.5/-2.4       |       |       |       |       |
| Standard tables:                                  |     | BK3              |       |       |       |       | BK3            |       |       |       |       |
| Uncorrected UGR                                   |     | -2.7             |       |       |       |       | -2.7           |       |       |       |       |

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     | 1.05                                   | 1.03 | 1.01 | 1.03 | 1.01 | 1.00 | 1.00 | 0.98 | 0.97 | 0.96 | 0.95 | 0.94 | 0.93 | 0.92 | 0.91 | 0.89 |
| 2     | 0.99                                   | 0.96 | 0.93 | 0.97 | 0.94 | 0.92 | 0.94 | 0.92 | 0.90 | 0.92 | 0.90 | 0.88 | 0.89 | 0.87 | 0.86 | 0.84 |
| 3     | 0.93                                   | 0.89 | 0.86 | 0.92 | 0.88 | 0.85 | 0.90 | 0.86 | 0.84 | 0.87 | 0.85 | 0.82 | 0.85 | 0.83 | 0.81 | 0.80 |
| 4     | 0.88                                   | 0.84 | 0.80 | 0.87 | 0.83 | 0.80 | 0.85 | 0.82 | 0.79 | 0.83 | 0.80 | 0.78 | 0.82 | 0.79 | 0.77 | 0.76 |
| 5     | 0.84                                   | 0.79 | 0.75 | 0.83 | 0.78 | 0.75 | 0.81 | 0.77 | 0.74 | 0.80 | 0.76 | 0.74 | 0.78 | 0.75 | 0.73 | 0.72 |
| 6     | 0.80                                   | 0.75 | 0.71 | 0.79 | 0.74 | 0.71 | 0.78 | 0.73 | 0.70 | 0.76 | 0.73 | 0.70 | 0.75 | 0.72 | 0.69 | 0.68 |
| 7     | 0.76                                   | 0.71 | 0.67 | 0.75 | 0.70 | 0.67 | 0.74 | 0.70 | 0.67 | 0.73 | 0.69 | 0.66 | 0.72 | 0.69 | 0.66 | 0.65 |
| 8     | 0.72                                   | 0.67 | 0.64 | 0.72 | 0.67 | 0.64 | 0.71 | 0.66 | 0.63 | 0.70 | 0.66 | 0.63 | 0.69 | 0.66 | 0.63 | 0.62 |
| 9     | 0.69                                   | 0.64 | 0.61 | 0.69 | 0.64 | 0.61 | 0.68 | 0.63 | 0.60 | 0.67 | 0.63 | 0.60 | 0.66 | 0.63 | 0.60 | 0.59 |
| 10    | 0.66                                   | 0.61 | 0.58 | 0.66 | 0.61 | 0.58 | 0.65 | 0.61 | 0.58 | 0.64 | 0.60 | 0.58 | 0.64 | 0.60 | 0.57 | 0.56 |



Luminaire Lumens:

FL=702.27,FM=80.8,FH=9.11,FVH=4.22

BL=717.5,BM=90.84,BH=9.21,BVH=4.24

UL=0,UH=0

BUG Rating:B2-U0-G0

## Intensity data(cd)

Appendix Page: 17 Total:19

| C/ $\gamma$ (°) | 0.0     | 1.0     | 2.0     | 3.0     | 4.0     | 5.0     | 6.0     | 7.0     | 8.0     |
|-----------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0.0             | 2655.22 | 2658.15 | 2664.00 | 2650.54 | 2623.04 | 2606.07 | 2594.36 | 2573.29 | 2541.11 |
| 45.0            | 2656.98 | 2654.05 | 2651.71 | 2647.62 | 2633.57 | 2610.16 | 2591.43 | 2581.49 | 2570.37 |
| 90.0            | 2653.47 | 2642.35 | 2639.42 | 2621.28 | 2606.65 | 2585.58 | 2575.63 | 2553.98 | 2529.99 |
| 135.0           | 2663.42 | 2654.05 | 2635.33 | 2624.79 | 2603.72 | 2583.24 | 2569.78 | 2562.17 | 2552.22 |
| 180.0           | 2655.22 | 2654.05 | 2640.59 | 2639.42 | 2626.55 | 2597.29 | 2582.66 | 2574.46 | 2568.03 |
| 225.0           | 2656.98 | 2656.98 | 2658.74 | 2644.11 | 2619.53 | 2597.87 | 2589.09 | 2581.49 | 2558.66 |
| 270.0           | 2653.47 | 2662.25 | 2666.93 | 2677.46 | 2670.44 | 2654.64 | 2633.57 | 2618.36 | 2601.97 |
| 315.0           | 2662.83 | 2666.93 | 2671.61 | 2665.76 | 2644.69 | 2619.53 | 2611.33 | 2600.80 | 2580.32 |
| 360.0           | 2655.22 | 2658.15 | 2664.00 | 2650.54 | 2623.04 | 2606.07 | 2594.36 | 2573.29 | 2541.11 |
| C/ $\gamma$ (°) | 9.0     | 10.0    | 11.0    | 12.0    | 13.0    | 14.0    | 15.0    | 16.0    | 17.0    |
| 0.0             | 2507.75 | 2466.20 | 2427.57 | 2361.44 | 2313.45 | 2266.05 | 2191.14 | 2129.11 | 2048.93 |
| 45.0            | 2550.47 | 2518.28 | 2486.68 | 2454.49 | 2406.50 | 2360.27 | 2307.60 | 2246.74 | 2165.39 |
| 90.0            | 2493.70 | 2457.42 | 2422.30 | 2368.46 | 2323.99 | 2276.00 | 2202.85 | 2143.74 | 2065.32 |
| 135.0           | 2529.40 | 2506.58 | 2474.98 | 2435.76 | 2395.38 | 2347.40 | 2268.98 | 2202.26 | 2119.74 |
| 180.0           | 2551.05 | 2527.06 | 2486.68 | 2453.32 | 2412.94 | 2350.91 | 2296.48 | 2237.37 | 2159.54 |
| 225.0           | 2537.59 | 2498.38 | 2466.78 | 2422.89 | 2367.88 | 2310.53 | 2253.17 | 2194.65 | 2093.41 |
| 270.0           | 2577.97 | 2547.54 | 2507.75 | 2453.32 | 2401.82 | 2345.06 | 2287.12 | 2211.04 | 2150.18 |
| 315.0           | 2546.96 | 2484.92 | 2439.28 | 2388.36 | 2312.28 | 2249.66 | 2172.41 | 2105.11 | 2017.91 |
| 360.0           | 2507.75 | 2466.20 | 2427.57 | 2361.44 | 2313.45 | 2266.05 | 2191.14 | 2129.11 | 2048.93 |
| C/ $\gamma$ (°) | 18.0    | 19.0    | 20.0    | 21.0    | 22.0    | 23.0    | 24.0    | 25.0    | 26.0    |
| 0.0             | 1934.81 | 1832.98 | 1707.75 | 1604.16 | 1499.40 | 1392.31 | 1149.44 | 1149.44 | 1073.19 |
| 45.0            | 2089.90 | 2002.70 | 1904.38 | 1780.31 | 1676.73 | 1566.71 | 1458.44 | 1330.27 | 1231.37 |
| 90.0            | 1943.01 | 1842.93 | 1733.49 | 1623.47 | 1490.04 | 1378.85 | 1155.47 | 1155.47 | 1066.87 |
| 135.0           | 2049.52 | 1962.32 | 1849.37 | 1759.24 | 1667.95 | 1573.73 | 1448.49 | 1346.66 | 1246.59 |
| 180.0           | 2092.24 | 1985.14 | 1891.51 | 1792.60 | 1695.46 | 1570.22 | 1470.73 | 1372.41 | 1275.26 |
| 225.0           | 1999.19 | 1892.09 | 1789.09 | 1653.32 | 1549.73 | 1417.47 | 1145.05 | 1145.05 | 1095.54 |
| 270.0           | 2072.34 | 1952.95 | 1846.44 | 1732.91 | 1597.14 | 1488.29 | 1385.87 | 1264.14 | 1171.09 |
| 315.0           | 1930.13 | 1805.48 | 1710.09 | 1614.11 | 1514.04 | 1387.04 | 1152.72 | 1152.72 | 1104.09 |
| 360.0           | 1934.81 | 1832.98 | 1707.75 | 1604.16 | 1499.40 | 1392.31 | 1149.44 | 1149.44 | 1073.19 |
| C/ $\gamma$ (°) | 27.0    | 28.0    | 29.0    | 30.0    | 31.0    | 32.0    | 33.0    | 34.0    | 35.0    |
| 0.0             | 957.66  | 809.31  | 689.34  | 569.66  | 463.32  | 335.92  | 247.90  | 157.72  | 100.07  |
| 45.0            | 1113.16 | 1004.30 | 849.81  | 722.81  | 605.18  | 489.89  | 364.07  | 316.08  | 316.08  |
| 90.0            | 961.88  | 818.09  | 703.73  | 587.27  | 445.53  | 342.30  | 252.06  | 178.96  | 107.68  |
| 135.0           | 1151.78 | 1049.37 | 897.21  | 775.48  | 619.23  | 503.94  | 402.11  | 306.72  | 306.72  |
| 180.0           | 1155.88 | 1055.80 | 938.76  | 778.99  | 653.17  | 532.61  | 399.77  | 303.21  | 303.21  |
| 225.0           | 986.69  | 859.99  | 730.24  | 579.20  | 466.19  | 365.00  | 272.77  | 178.38  | 119.62  |
| 270.0           | 1072.19 | 965.09  | 822.30  | 695.31  | 582.94  | 472.34  | 342.42  | 296.18  | 296.18  |
| 315.0           | 968.14  | 844.95  | 721.82  | 603.31  | 463.91  | 364.07  | 253.40  | 177.79  | 116.87  |
| 360.0           | 957.66  | 809.31  | 689.34  | 569.66  | 463.32  | 335.92  | 247.90  | 157.72  | 100.07  |
| C/ $\gamma$ (°) | 36.0    | 37.0    | 38.0    | 39.0    | 40.0    | 41.0    | 42.0    | 43.0    | 44.0    |
| 0.0             | 65.02   | 46.17   | 39.44   | 34.06   | 29.14   | 23.35   | 21.07   | 19.02   | 17.03   |
| 45.0            | 118.57  | 74.73   | 47.11   | 40.20   | 34.65   | 28.68   | 24.52   | 21.30   | 19.02   |
| 90.0            | 71.16   | 51.32   | 43.89   | 37.63   | 33.36   | 29.55   | 25.57   | 23.82   | 21.83   |
| 135.0           | 133.96  | 75.32   | 50.56   | 41.14   | 35.17   | 29.44   | 25.93   | 23.64   | 22.06   |
| 180.0           | 134.54  | 84.39   | 54.60   | 42.19   | 35.05   | 30.72   | 27.45   | 24.58   | 22.82   |
| 225.0           | 75.96   | 50.21   | 43.95   | 39.33   | 34.53   | 30.90   | 27.68   | 25.40   | 23.88   |
| 270.0           | 107.97  | 69.35   | 49.28   | 41.84   | 36.99   | 33.07   | 28.15   | 25.11   | 23.35   |
| 315.0           | 65.49   | 46.82   | 39.97   | 34.53   | 28.85   | 24.81   | 21.54   | 19.08   | 17.44   |
| 360.0           | 65.02   | 46.17   | 39.44   | 34.06   | 29.14   | 23.35   | 21.07   | 19.02   | 17.03   |

## Intensity data(cd)

Appendix Page: 18 Total:19

| C/γ(°) | 45.0  | 46.0  | 47.0  | 48.0  | 49.0  | 50.0  | 51.0  | 52.0  | 53.0  |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0.0    | 16.04 | 15.10 | 14.40 | 13.69 | 13.11 | 12.70 | 12.11 | 11.76 | 11.29 |
| 45.0   | 17.44 | 16.15 | 15.22 | 14.46 | 13.87 | 13.17 | 12.70 | 12.23 | 11.76 |
| 90.0   | 19.66 | 18.26 | 16.80 | 15.92 | 15.04 | 14.40 | 13.93 | 13.17 | 12.70 |
| 135.0  | 20.48 | 19.37 | 18.38 | 17.32 | 16.50 | 15.63 | 14.69 | 14.10 | 13.52 |
| 180.0  | 21.71 | 20.54 | 19.49 | 18.79 | 17.85 | 16.80 | 16.04 | 15.10 | 14.40 |
| 225.0  | 22.41 | 20.89 | 19.37 | 18.20 | 17.26 | 16.04 | 15.10 | 14.28 | 13.69 |
| 270.0  | 21.71 | 19.72 | 18.49 | 17.38 | 16.21 | 15.39 | 14.63 | 13.87 | 13.05 |
| 315.0  | 16.15 | 15.27 | 14.34 | 13.75 | 13.17 | 12.64 | 12.17 | 11.59 | 11.24 |
| 360.0  | 16.04 | 15.10 | 14.40 | 13.69 | 13.11 | 12.70 | 12.11 | 11.76 | 11.29 |
|        |       |       |       |       |       |       |       |       |       |
| C/γ(°) | 54.0  | 55.0  | 56.0  | 57.0  | 58.0  | 59.0  | 60.0  | 61.0  | 62.0  |
| 0.0    | 11.00 | 10.77 | 10.53 | 10.36 | 10.18 | 10.07 | 9.95  | 9.89  | 9.77  |
| 45.0   | 11.29 | 11.00 | 10.65 | 10.36 | 10.18 | 9.95  | 9.83  | 9.71  | 9.60  |
| 90.0   | 12.17 | 11.59 | 11.12 | 10.89 | 10.65 | 10.42 | 10.12 | 9.95  | 9.89  |
| 135.0  | 12.93 | 12.58 | 12.17 | 11.53 | 11.12 | 10.71 | 10.42 | 10.24 | 10.12 |
| 180.0  | 13.93 | 13.34 | 12.64 | 12.23 | 11.88 | 11.47 | 11.06 | 10.83 | 10.59 |
| 225.0  | 12.93 | 12.35 | 11.65 | 11.12 | 10.77 | 10.36 | 10.07 | 9.89  | 9.71  |
| 270.0  | 12.52 | 11.82 | 11.29 | 10.77 | 10.42 | 10.07 | 9.83  | 9.66  | 9.54  |
| 315.0  | 10.94 | 10.59 | 10.36 | 10.18 | 10.01 | 9.89  | 9.77  | 9.66  | 9.54  |
| 360.0  | 11.00 | 10.77 | 10.53 | 10.36 | 10.18 | 10.07 | 9.95  | 9.89  | 9.77  |
|        |       |       |       |       |       |       |       |       |       |
| C/γ(°) | 63.0  | 64.0  | 65.0  | 66.0  | 67.0  | 68.0  | 69.0  | 70.0  | 71.0  |
| 0.0    | 9.71  | 9.60  | 9.48  | 9.36  | 9.25  | 9.13  | 9.07  | 9.01  | 8.90  |
| 45.0   | 9.48  | 9.31  | 9.13  | 8.95  | 8.90  | 8.78  | 8.78  | 8.72  | 8.66  |
| 90.0   | 9.71  | 9.48  | 9.31  | 9.13  | 8.95  | 8.90  | 8.84  | 8.72  | 8.66  |
| 135.0  | 10.07 | 9.89  | 9.71  | 9.48  | 9.13  | 8.95  | 8.84  | 8.78  | 8.72  |
| 180.0  | 10.42 | 10.30 | 10.12 | 9.89  | 9.60  | 9.36  | 9.25  | 9.19  | 9.13  |
| 225.0  | 9.54  | 9.42  | 9.31  | 9.07  | 8.90  | 8.72  | 8.72  | 8.66  | 8.54  |
| 270.0  | 9.42  | 9.36  | 9.25  | 9.13  | 9.01  | 9.01  | 8.90  | 8.84  | 8.78  |
| 315.0  | 9.48  | 9.31  | 9.19  | 9.07  | 9.01  | 8.90  | 8.84  | 8.78  | 8.72  |
| 360.0  | 9.71  | 9.60  | 9.48  | 9.36  | 9.25  | 9.13  | 9.07  | 9.01  | 8.90  |
|        |       |       |       |       |       |       |       |       |       |
| C/γ(°) | 72.0  | 73.0  | 74.0  | 75.0  | 76.0  | 77.0  | 78.0  | 79.0  | 80.0  |
| 0.0    | 8.84  | 8.78  | 8.72  | 8.66  | 8.60  | 8.54  | 8.43  | 8.37  | 8.31  |
| 45.0   | 8.60  | 8.54  | 8.49  | 8.43  | 8.31  | 8.25  | 8.25  | 8.19  | 8.13  |
| 90.0   | 8.60  | 8.60  | 8.49  | 8.37  | 8.37  | 8.31  | 8.25  | 8.19  | 8.13  |
| 135.0  | 8.60  | 8.54  | 8.49  | 8.43  | 8.37  | 8.31  | 8.25  | 8.19  | 8.08  |
| 180.0  | 9.07  | 9.01  | 8.90  | 8.84  | 8.72  | 8.66  | 8.60  | 8.54  | 8.49  |
| 225.0  | 8.49  | 8.43  | 8.37  | 8.31  | 8.25  | 8.19  | 8.13  | 8.08  | 8.02  |
| 270.0  | 8.72  | 8.66  | 8.54  | 8.54  | 8.43  | 8.37  | 8.31  | 8.25  | 8.19  |
| 315.0  | 8.66  | 8.54  | 8.49  | 8.43  | 8.37  | 8.31  | 8.31  | 8.19  | 8.13  |
| 360.0  | 8.84  | 8.78  | 8.72  | 8.66  | 8.60  | 8.54  | 8.43  | 8.37  | 8.31  |
|        |       |       |       |       |       |       |       |       |       |
| C/γ(°) | 81.0  | 82.0  | 83.0  | 84.0  | 85.0  | 86.0  | 87.0  | 88.0  | 89.0  |
| 0.0    | 8.25  | 8.19  | 8.02  | 7.96  | 7.84  | 7.67  | 7.55  | 7.49  | 7.32  |
| 45.0   | 8.02  | 7.96  | 7.90  | 7.84  | 7.78  | 7.61  | 7.55  | 7.43  | 7.37  |
| 90.0   | 8.02  | 8.02  | 7.90  | 7.78  | 7.61  | 7.55  | 7.43  | 7.43  | 7.37  |
| 135.0  | 8.08  | 8.02  | 7.96  | 7.90  | 7.72  | 7.67  | 7.61  | 7.49  | 7.43  |
| 180.0  | 8.43  | 8.31  | 8.25  | 8.13  | 8.02  | 7.84  | 7.78  | 7.72  | 7.61  |
| 225.0  | 7.96  | 7.90  | 7.84  | 7.78  | 7.67  | 7.61  | 7.55  | 7.43  | 7.37  |
| 270.0  | 8.13  | 8.02  | 7.96  | 7.84  | 7.72  | 7.61  | 7.55  | 7.43  | 7.37  |
| 315.0  | 8.08  | 7.96  | 7.96  | 7.84  | 7.72  | 7.55  | 7.43  | 7.37  | 7.32  |
| 360.0  | 8.25  | 8.19  | 8.02  | 7.96  | 7.84  | 7.67  | 7.55  | 7.49  | 7.32  |

Intensity data(cd)

|                       |      |
|-----------------------|------|
| C/ $\gamma(^{\circ})$ | 90.0 |
| 0.0                   | 7.32 |
| 45.0                  | 7.32 |
| 90.0                  | 7.32 |
| 135.0                 | 7.32 |
| 180.0                 | 7.37 |
| 225.0                 | 7.32 |
| 270.0                 | 7.37 |
| 315.0                 | 7.32 |
| 360.0                 | 7.32 |