



NATA LIGHTING CO.,LTD.  
www.nata.cn  
Email:info@nata.com  
Tel:+86-750-3770000 Fax:+86-750-3771111  
Address:380JinOu Road,GaoXin Zone,Jiang Men City,Guangdong,China

---

## Nata

---

|                                 |                     |
|---------------------------------|---------------------|
| LumCAT: 2-2182-M                |                     |
| Luminaire: BJB 47.360.1010      |                     |
| Report No: NATA0100             | Voltage(V): 35.7200 |
| Test No: GC202002108            | Current(A): 0.5970  |
| LampCAT: OSRAM OPTO SOLERIQ S15 | Power (W): 21.3000  |
| Lamp flux(lm): 2825.0           | PF: 0.0000          |
| Number of Lamps: 1              | Ballast type: DC    |
| Length(mm): 0                   | Width(mm): 0        |
| Phm Type: C                     | Height(mm): 0       |

---

## Photometric Results

---

Lumens(lm): 2269.03  
Efficiency(%): 80.32%  
Lumens(lm)/Power(W): 106.53  
Central intensity(cd): 6621.188  
Maximum intensity(cd): 6621.188  
Angle of maximum intensity: C=0.0  $\gamma$ =0.0  
Beam Angle(50%Imax): [C0/180]Total=35.3  
[C90/270]Total=35.3  
Field angle(10%Imax): [C0/180]Total=53.7  
[C90/270]Total=53.7  
Maximum s/h(1/2): C0\_180=0.58 C90\_270=0.58  
Maximum s/h(1/4): C0\_180=0.56 C90\_270=0.56  
Up flux rate of lamp(%): 0.00%  
Down flux rate of lamp(%): 80.32%  
Up flux rate of LUM(%): - -  
Down flux rate of LUM(%): 100.00%  
CIE Type : Direct lighting  
Output flux ratio in  $\pi$  solid angle : 98.398%

| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 0.0                | 6621.188      | 0.000       | 0         | .000%       | .000%      |
| 1.0                | 6605.086      | 6.329       | 6.329     | .224%       | .279%      |
| 2.0                | 6560.719      | 18.897      | 25.225    | .669%       | 1.112%     |
| 3.0                | 6487.031      | 31.206      | 56.431    | 1.105%      | 2.487%     |
| 4.0                | 6392.742      | 43.113      | 99.544    | 1.526%      | 4.387%     |
| 5.0                | 6283.336      | 54.532      | 154.076   | 1.930%      | 6.790%     |
| 6.0                | 6128.578      | 65.228      | 219.304   | 2.309%      | 9.665%     |
| 7.0                | 5957.438      | 75.018      | 294.321   | 2.655%      | 12.971%    |
| 8.0                | 5780.953      | 84.009      | 378.331   | 2.974%      | 16.674%    |
| 9.0                | 5570.508      | 91.997      | 470.328   | 3.257%      | 20.728%    |
| 10.0               | 5327.859      | 98.626      | 568.954   | 3.491%      | 25.075%    |
| 11.0               | 5107.500      | 104.271     | 673.225   | 3.691%      | 29.670%    |
| 12.0               | 4877.367      | 109.149     | 782.374   | 3.864%      | 34.481%    |
| 13.0               | 4599.352      | 112.465     | 894.839   | 3.981%      | 39.437%    |
| 14.0               | 4355.930      | 114.627     | 1009.466  | 4.058%      | 44.489%    |
| 15.0               | 4109.906      | 116.223     | 1125.688  | 4.114%      | 49.611%    |
| 16.0               | 3821.484      | 116.217     | 1241.906  | 4.114%      | 54.733%    |
| 17.0               | 3505.289      | 114.098     | 1356.003  | 4.039%      | 59.761%    |
| 18.0               | 3204.914      | 110.637     | 1466.64   | 3.916%      | 64.637%    |
| 19.0               | 2884.219      | 105.938     | 1572.578  | 3.750%      | 69.306%    |
| 20.0               | 2565.281      | 99.741      | 1672.319  | 3.531%      | 73.702%    |
| 21.0               | 2250.703      | 92.477      | 1764.796  | 3.274%      | 77.778%    |
| 22.0               | 1952.789      | 84.471      | 1849.267  | 2.990%      | 81.500%    |
| 23.0               | 1686.516      | 76.362      | 1925.629  | 2.703%      | 84.866%    |
| 24.0               | 1330.706      | 65.967      | 1991.597  | 2.335%      | 87.773%    |
| 25.0               | 1097.198      | 55.205      | 2046.802  | 1.954%      | 90.206%    |
| 26.0               | 858.101       | 46.155      | 2092.957  | 1.634%      | 92.240%    |
| 27.0               | 632.236       | 36.461      | 2129.418  | 1.291%      | 93.847%    |
| 28.0               | 408.206       | 26.342      | 2155.76   | .932%       | 95.008%    |
| 29.0               | 265.099       | 17.616      | 2173.376  | .624%       | 95.784%    |
| 30.0               | 173.805       | 11.850      | 2185.226  | .419%       | 96.307%    |
| 31.0               | 93.509        | 7.439       | 2192.665  | .263%       | 96.635%    |
| 32.0               | 63.773        | 4.506       | 2197.171  | .160%       | 96.833%    |
| 33.0               | 44.888        | 3.201       | 2200.372  | .113%       | 96.974%    |
| 34.0               | 32.442        | 2.340       | 2202.712  | .083%       | 97.077%    |
| 35.0               | 24.462        | 1.767       | 2204.48   | .063%       | 97.155%    |
| 36.0               | 20.348        | 1.427       | 2205.906  | .051%       | 97.218%    |
| 37.0               | 17.951        | 1.249       | 2207.155  | .044%       | 97.273%    |

| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 38.0               | 16.502        | 1.150       | 2208.305  | .041%       | 97.324%    |
| 39.0               | 15.595        | 1.096       | 2209.401  | .039%       | 97.372%    |
| 40.0               | 14.984        | 1.066       | 2210.467  | .038%       | 97.419%    |
| 41.0               | 14.555        | 1.052       | 2211.519  | .037%       | 97.466%    |
| 42.0               | 14.182        | 1.044       | 2212.563  | .037%       | 97.512%    |
| 43.0               | 13.901        | 1.040       | 2213.604  | .037%       | 97.557%    |
| 44.0               | 13.697        | 1.042       | 2214.645  | .037%       | 97.603%    |
| 45.0               | 13.528        | 1.046       | 2215.692  | .037%       | 97.649%    |
| 46.0               | 13.359        | 1.052       | 2216.743  | .037%       | 97.696%    |
| 47.0               | 13.261        | 1.059       | 2217.802  | .037%       | 97.742%    |
| 48.0               | 13.177        | 1.069       | 2218.871  | .038%       | 97.790%    |
| 49.0               | 13.078        | 1.078       | 2219.949  | .038%       | 97.837%    |
| 50.0               | 13.050        | 1.089       | 2221.038  | .039%       | 97.885%    |
| 51.0               | 13.015        | 1.103       | 2222.141  | .039%       | 97.934%    |
| 52.0               | 12.980        | 1.115       | 2223.256  | .039%       | 97.983%    |
| 53.0               | 12.952        | 1.128       | 2224.384  | .040%       | 98.033%    |
| 54.0               | 12.945        | 1.141       | 2225.526  | .040%       | 98.083%    |
| 55.0               | 12.952        | 1.156       | 2226.682  | .041%       | 98.134%    |
| 56.0               | 12.945        | 1.170       | 2227.852  | .041%       | 98.185%    |
| 57.0               | 12.952        | 1.184       | 2229.036  | .042%       | 98.238%    |
| 58.0               | 12.945        | 1.198       | 2230.233  | .042%       | 98.290%    |
| 59.0               | 12.952        | 1.211       | 2231.444  | .043%       | 98.344%    |
| 60.0               | 12.959        | 1.224       | 2232.668  | .043%       | 98.398%    |
| 61.0               | 13.029        | 1.240       | 2233.908  | .044%       | 98.452%    |
| 62.0               | 13.078        | 1.258       | 2235.166  | .045%       | 98.508%    |
| 63.0               | 13.148        | 1.276       | 2236.442  | .045%       | 98.564%    |
| 64.0               | 13.247        | 1.295       | 2237.737  | .046%       | 98.621%    |
| 65.0               | 13.338        | 1.316       | 2239.053  | .047%       | 98.679%    |
| 66.0               | 13.380        | 1.333       | 2240.386  | .047%       | 98.738%    |
| 67.0               | 13.465        | 1.350       | 2241.736  | .048%       | 98.797%    |
| 68.0               | 13.570        | 1.370       | 2243.105  | .048%       | 98.858%    |
| 69.0               | 13.634        | 1.388       | 2244.493  | .049%       | 98.919%    |
| 70.0               | 13.570        | 1.397       | 2245.89   | .049%       | 98.980%    |
| 71.0               | 13.317        | 1.390       | 2247.28   | .049%       | 99.042%    |
| 72.0               | 12.895        | 1.363       | 2248.643  | .048%       | 99.102%    |
| 73.0               | 12.727        | 1.340       | 2249.983  | .047%       | 99.161%    |
| 74.0               | 12.452        | 1.324       | 2251.306  | .047%       | 99.219%    |
| 75.0               | 11.960        | 1.290       | 2252.596  | .046%       | 99.276%    |

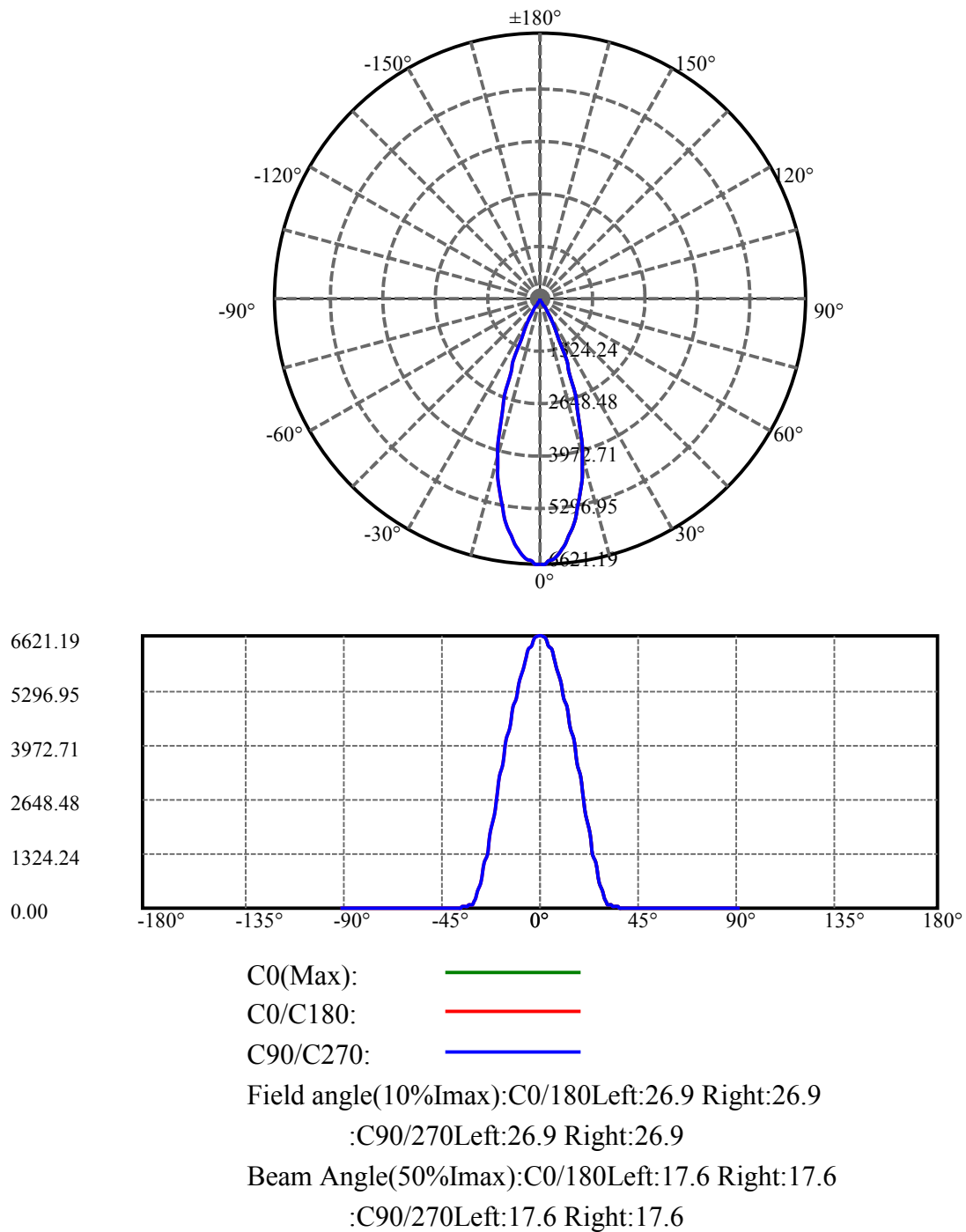
| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 76.0               | 11.475        | 1.244       | 2253.84   | .044%       | 99.331%    |
| 77.0               | 11.088        | 1.203       | 2255.043  | .043%       | 99.384%    |
| 78.0               | 10.793        | 1.171       | 2256.215  | .041%       | 99.435%    |
| 79.0               | 10.505        | 1.144       | 2257.359  | .041%       | 99.486%    |
| 80.0               | 10.315        | 1.122       | 2258.481  | .040%       | 99.535%    |
| 81.0               | 10.125        | 1.105       | 2259.587  | .039%       | 99.584%    |
| 82.0               | 9.963         | 1.089       | 2260.676  | .039%       | 99.632%    |
| 83.0               | 9.858         | 1.078       | 2261.753  | .038%       | 99.679%    |
| 84.0               | 9.766         | 1.069       | 2262.823  | .038%       | 99.727%    |
| 85.0               | 9.717         | 1.063       | 2263.886  | .038%       | 99.773%    |
| 86.0               | 9.668         | 1.060       | 2264.946  | .038%       | 99.820%    |
| 87.0               | 9.499         | 1.049       | 2265.995  | .037%       | 99.866%    |
| 88.0               | 9.246         | 1.027       | 2267.021  | .036%       | 99.912%    |
| 89.0               | 9.127         | 1.007       | 2268.028  | .036%       | 99.956%    |
| 90.0               | 9.077         | 0.998       | 2269.026  | .035%       | 100.000%   |

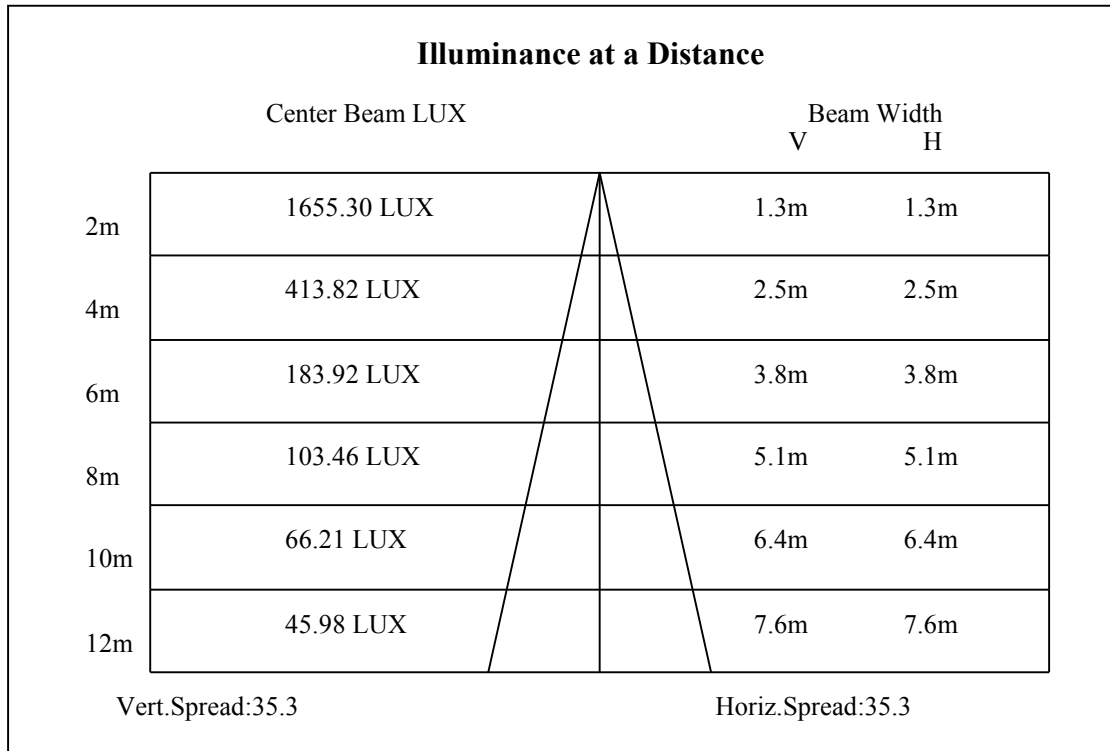
## ZONAL LUMEN SUMMARY

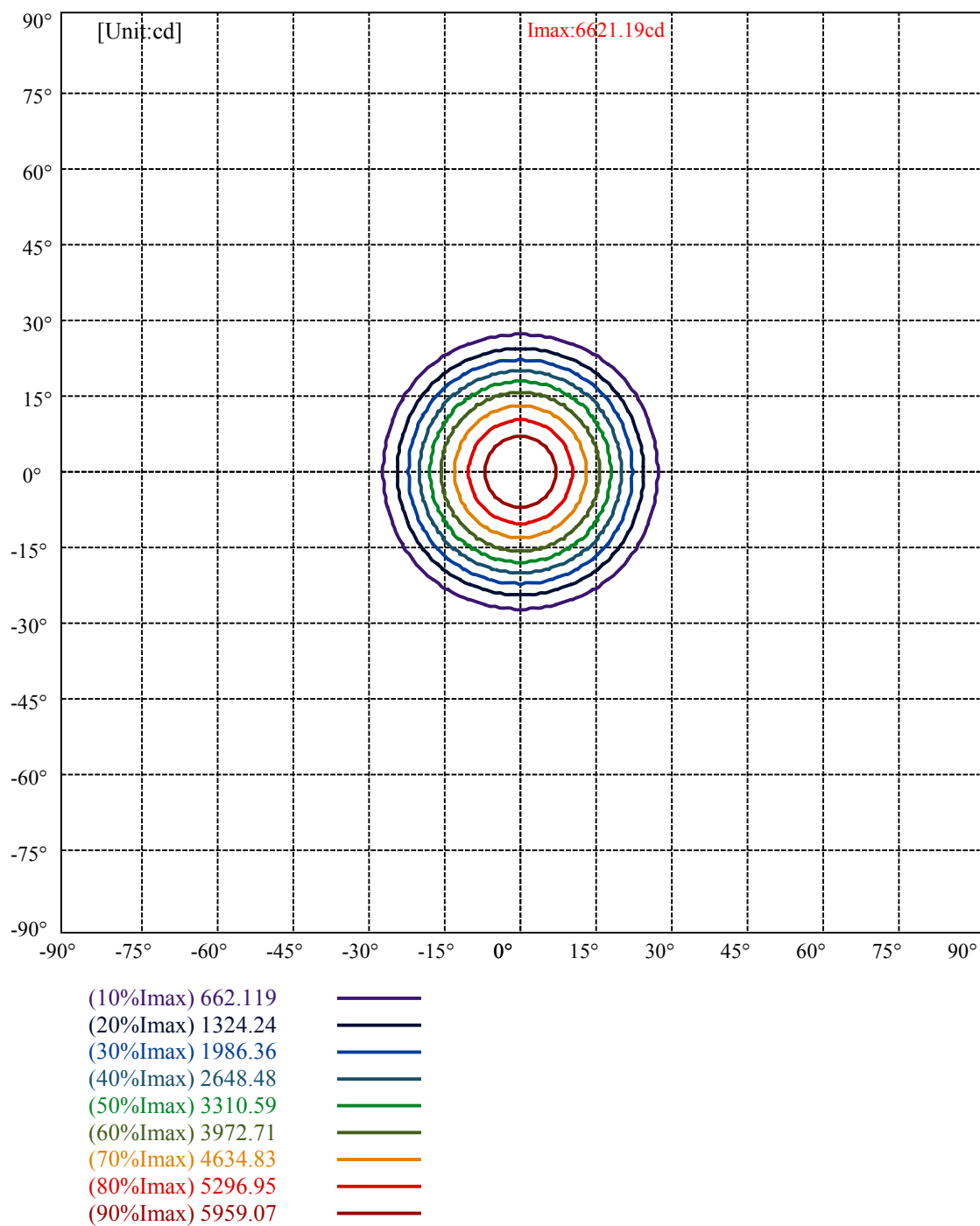
| Zone    | Lumens  | %Lamp  | %Fixt   |
|---------|---------|--------|---------|
| 0-30    | 2185.23 | 77.35% | 96.31%  |
| 0-40    | 2210.47 | 78.25% | 97.42%  |
| 0-60    | 2232.67 | 79.03% | 98.40%  |
| 0-90    | 2268.03 | 80.28% | 99.96%  |
| 0-120   | 2268.03 | 80.28% | 99.96%  |
| 0-180   | 2269.03 | 80.32% | 100.00% |
| 60-90   | 36.58   | 1.30%  | 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%   |
| 0-21.60 | 1815.22 | 64.26% | 80.00%  |

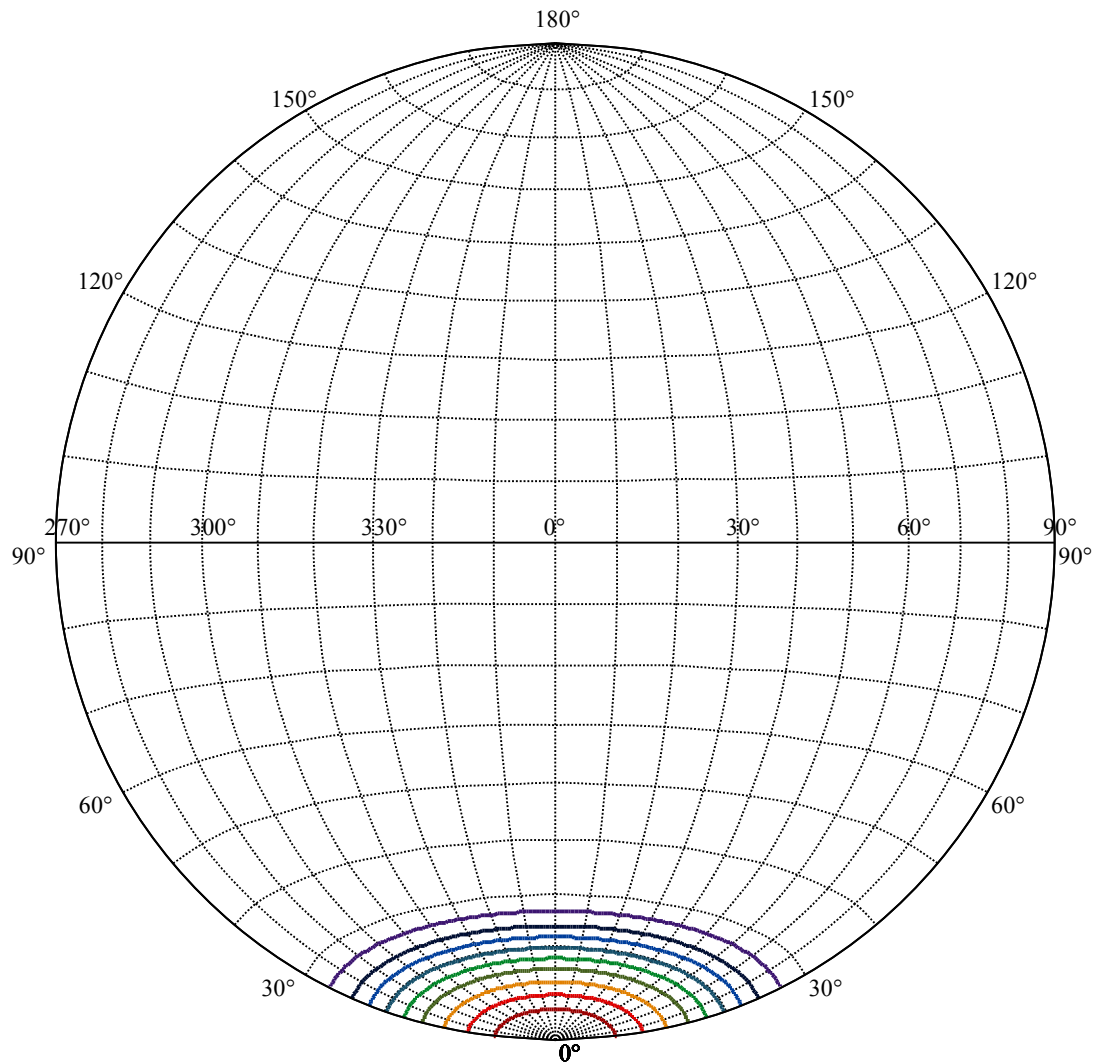
## ZONAL LUMEN SUMMARY

|         |         |
|---------|---------|
| 0-10    | 568.95  |
| 10-20   | 1103.36 |
| 20-30   | 512.91  |
| 30-40   | 25.24   |
| 40-50   | 10.57   |
| 50-60   | 11.63   |
| 60-70   | 13.22   |
| 70-80   | 12.59   |
| 80-90   | 9.55    |
| 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    |









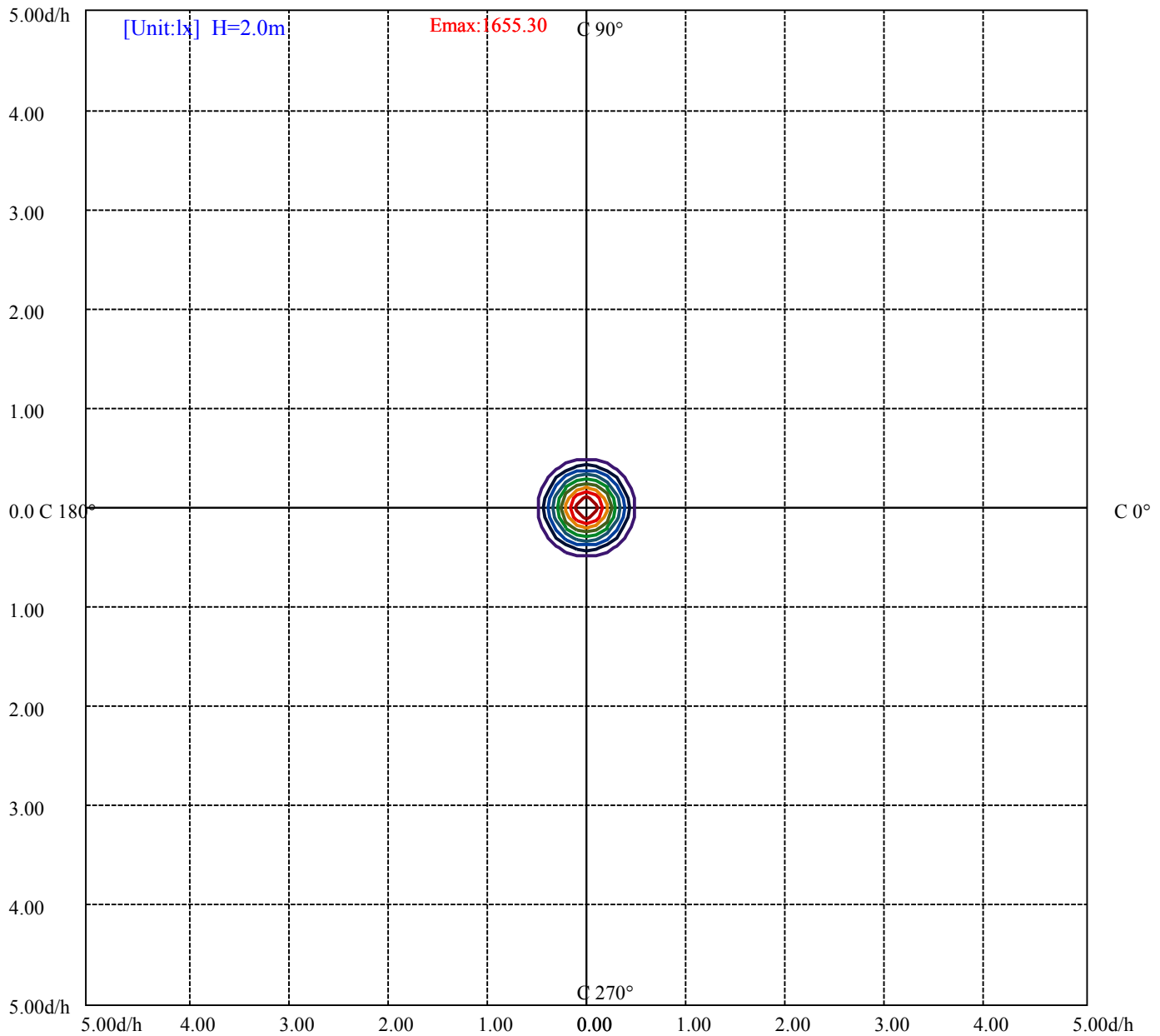
House

[Unit:cd]

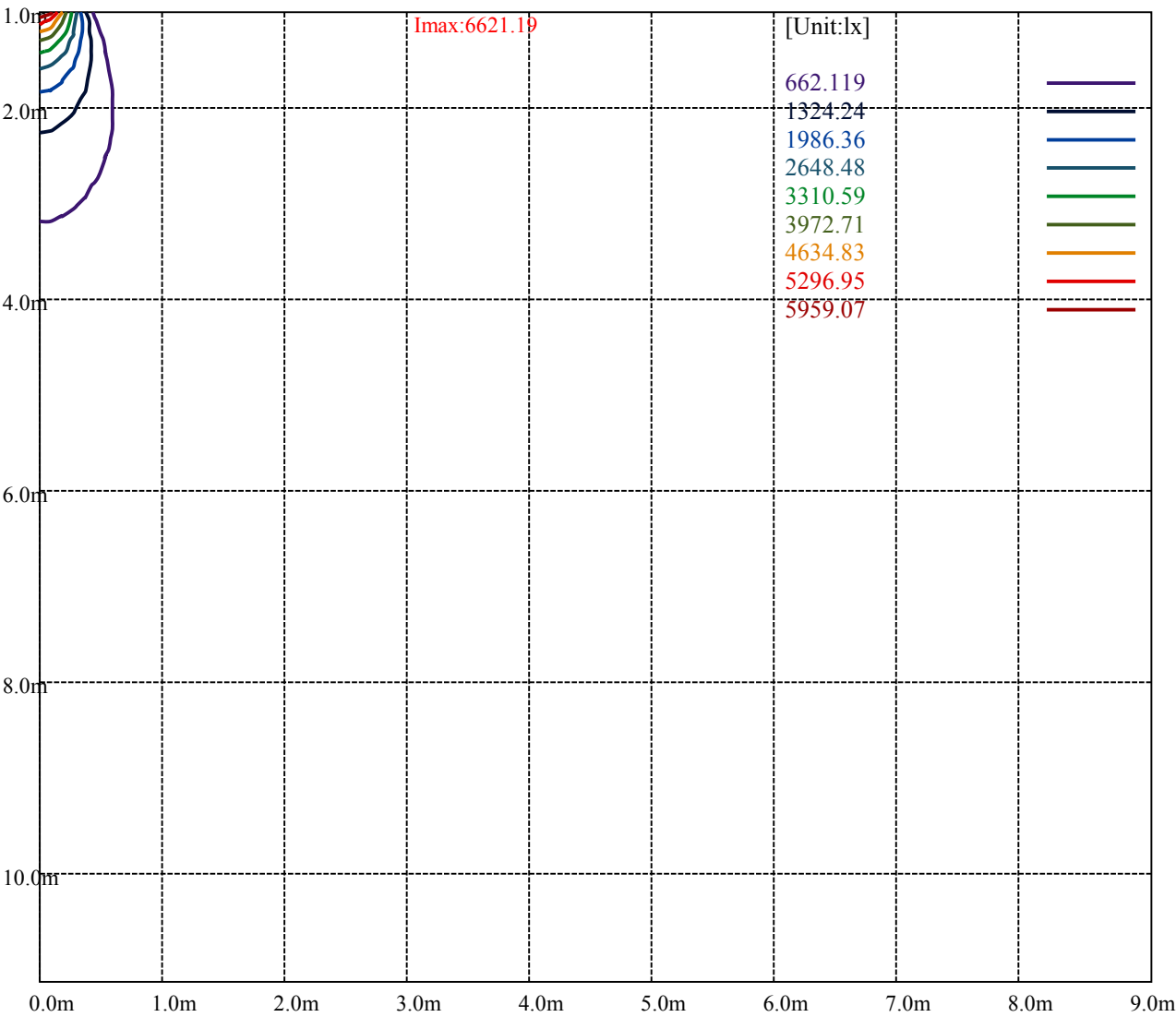
Road

**Imax:6621.19**

|           |         |   |
|-----------|---------|---|
| (10%Imax) | 662.119 | — |
| (20%Imax) | 1324.24 | — |
| (30%Imax) | 1986.36 | — |
| (40%Imax) | 2648.48 | — |
| (50%Imax) | 3310.59 | — |
| (60%Imax) | 3972.71 | — |
| (70%Imax) | 4634.83 | — |
| (80%Imax) | 5296.95 | — |
| (90%Imax) | 5959.07 | — |



|           |          |   |
|-----------|----------|---|
| (10%Emax) | 165.5298 | — |
| (20%Emax) | 331.06   | — |
| (30%Emax) | 496.59   | — |
| (40%Emax) | 662.1175 | — |
| (50%Emax) | 827.6475 | — |
| (60%Emax) | 993.1775 | — |
| (70%Emax) | 1158.708 | — |
| (80%Emax) | 1324.238 | — |
| (90%Emax) | 1489.767 | — |



Luminance Table

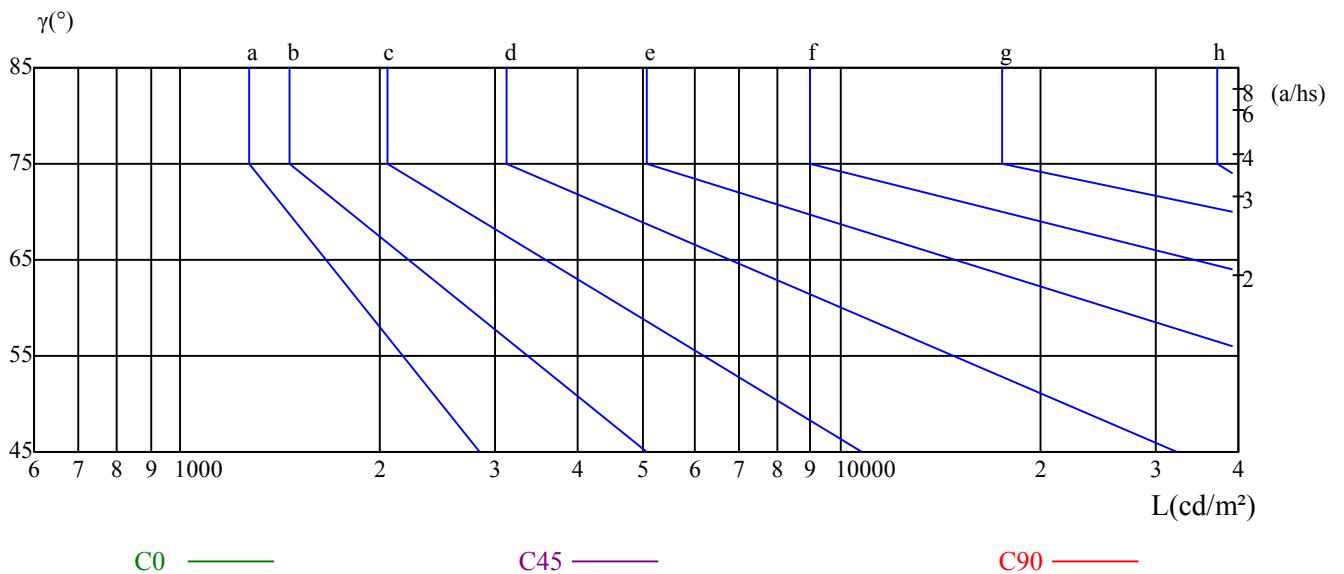
| $\gamma$ | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 |
|----------|----|----|----|----|----|----|----|----|----|
| C0       | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| C45      | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| C90      | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |

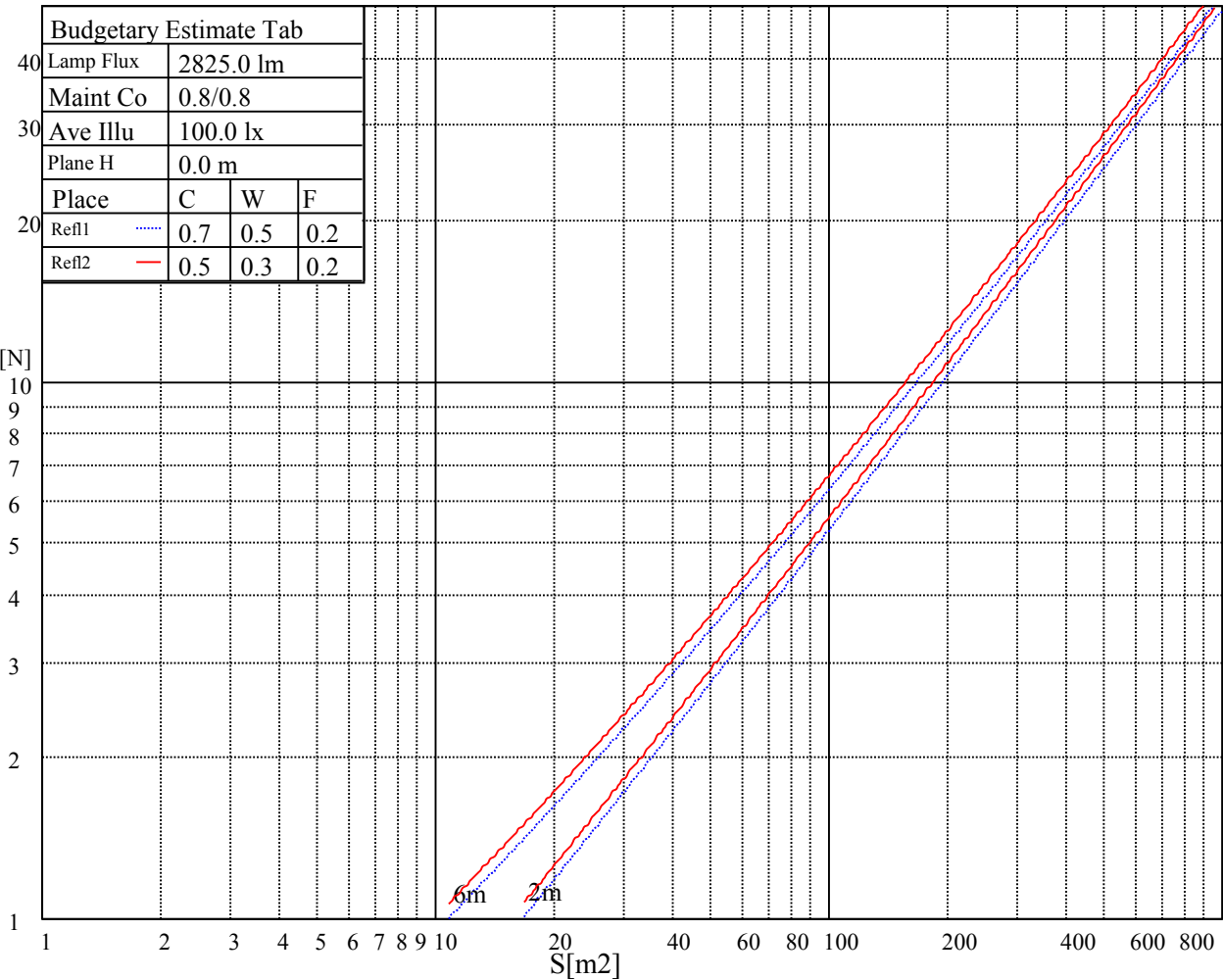
| L(Hor)(65) | L(Ver)(65) | L45(65) | L(Hor)(75) | L(Ver)(75) | L45(75) | L(Hor)(85) | L(Ver)(85) | L45(85) |
|------------|------------|---------|------------|------------|---------|------------|------------|---------|
| 0          | 0          | 0       | 0          | 0          | 0       | 0          | 0          | 0       |

Glare Table

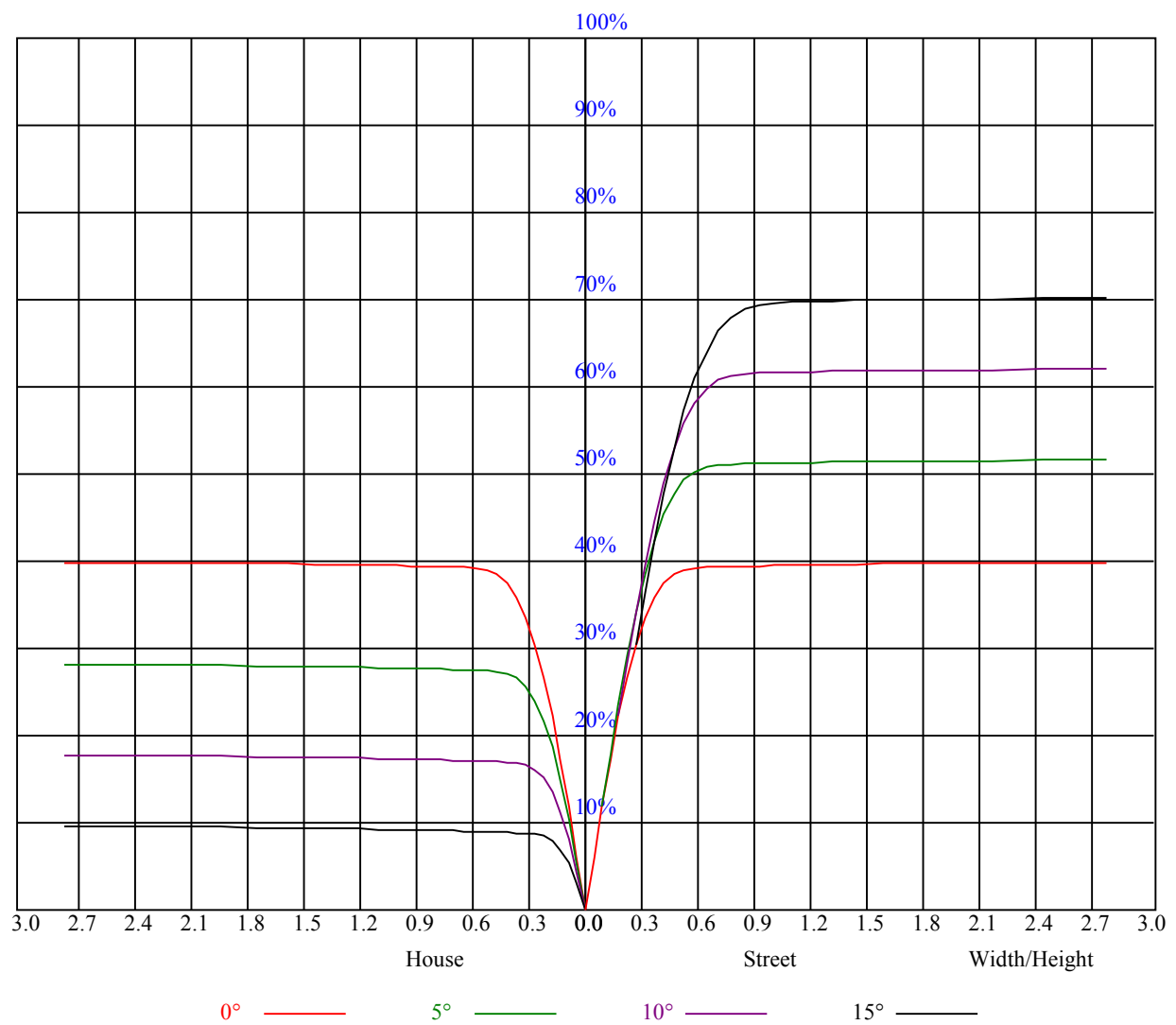
| Glare | Quality | Service Values Illuminance(lx) |      |      |            |            |            |            |            |
|-------|---------|--------------------------------|------|------|------------|------------|------------|------------|------------|
| 1.15  | A       | 2000                           | 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 RHOFC=20 CU |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 0    | 0.96                                    | 0.96 | 0.96 | 0.93 | 0.93 | 0.93 | 0.89 | 0.89 | 0.89 | 0.85 | 0.85 | 0.85 | 0.82 | 0.82 | 0.82 | 0.80 |
| 1    | 0.90                                    | 0.88 | 0.87 | 0.88 | 0.87 | 0.85 | 0.85 | 0.84 | 0.83 | 0.82 | 0.81 | 0.80 | 0.79 | 0.79 | 0.78 | 0.77 |
| 2    | 0.85                                    | 0.83 | 0.80 | 0.84 | 0.82 | 0.80 | 0.81 | 0.80 | 0.78 | 0.79 | 0.78 | 0.76 | 0.77 | 0.76 | 0.75 | 0.73 |
| 3    | 0.81                                    | 0.78 | 0.76 | 0.80 | 0.77 | 0.75 | 0.78 | 0.76 | 0.74 | 0.76 | 0.74 | 0.73 | 0.75 | 0.73 | 0.72 | 0.71 |
| 4    | 0.78                                    | 0.74 | 0.72 | 0.77 | 0.74 | 0.71 | 0.75 | 0.73 | 0.70 | 0.74 | 0.72 | 0.70 | 0.72 | 0.70 | 0.69 | 0.68 |
| 5    | 0.75                                    | 0.71 | 0.68 | 0.74 | 0.71 | 0.68 | 0.73 | 0.70 | 0.67 | 0.71 | 0.69 | 0.67 | 0.70 | 0.68 | 0.66 | 0.65 |
| 6    | 0.72                                    | 0.68 | 0.65 | 0.71 | 0.68 | 0.65 | 0.70 | 0.67 | 0.65 | 0.69 | 0.66 | 0.64 | 0.68 | 0.66 | 0.64 | 0.63 |
| 7    | 0.69                                    | 0.65 | 0.63 | 0.69 | 0.65 | 0.63 | 0.68 | 0.65 | 0.62 | 0.67 | 0.64 | 0.62 | 0.66 | 0.64 | 0.62 | 0.61 |
| 8    | 0.67                                    | 0.63 | 0.60 | 0.66 | 0.63 | 0.60 | 0.65 | 0.62 | 0.60 | 0.65 | 0.62 | 0.60 | 0.64 | 0.62 | 0.60 | 0.59 |
| 9    | 0.64                                    | 0.61 | 0.58 | 0.64 | 0.61 | 0.58 | 0.63 | 0.60 | 0.58 | 0.63 | 0.60 | 0.58 | 0.62 | 0.60 | 0.58 | 0.57 |
| 10   | 0.62                                    | 0.59 | 0.56 | 0.62 | 0.59 | 0.56 | 0.61 | 0.58 | 0.56 | 0.61 | 0.58 | 0.56 | 0.60 | 0.58 | 0.56 | 0.55 |



## Nata 2-2182-M

## Intensity data(cd)

Appendix Page: 16 Total:18

| C/γ(°) | 0.0     | 1.0     | 2.0     | 3.0     | 4.0     | 5.0     | 6.0     | 7.0     | 8.0     |
|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0.0    | 6625.13 | 6625.13 | 6590.81 | 6525.56 | 6445.69 | 6346.69 | 6194.25 | 6046.31 | 5882.63 |
| 45.0   | 6620.63 | 6603.75 | 6553.13 | 6484.50 | 6386.06 | 6279.75 | 6132.94 | 5955.75 | 5779.69 |
| 90.0   | 6612.75 | 6574.50 | 6516.00 | 6414.19 | 6310.69 | 6187.50 | 6019.31 | 5824.69 | 5635.69 |
| 135.0  | 6626.25 | 6604.31 | 6557.63 | 6481.13 | 6378.19 | 6266.81 | 6094.69 | 5930.44 | 5752.13 |
| 180.0  | 6625.13 | 6591.38 | 6539.06 | 6453.56 | 6342.75 | 6221.81 | 6054.75 | 5859.00 | 5668.31 |
| 225.0  | 6620.63 | 6603.19 | 6561.00 | 6482.81 | 6397.31 | 6289.88 | 6121.13 | 5962.50 | 5784.19 |
| 270.0  | 6612.75 | 6620.63 | 6595.88 | 6544.13 | 6463.69 | 6360.75 | 6242.63 | 6081.19 | 5919.19 |
| 315.0  | 6626.25 | 6617.81 | 6572.25 | 6510.38 | 6417.56 | 6313.50 | 6168.94 | 5999.63 | 5825.81 |
| 360.0  | 6625.13 | 6625.13 | 6590.81 | 6525.56 | 6445.69 | 6346.69 | 6194.25 | 6046.31 | 5882.63 |

| C/γ(°) | 9.0     | 10.0    | 11.0    | 12.0    | 13.0    | 14.0    | 15.0    | 16.0    | 17.0    |
|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0.0    | 5655.38 | 5456.25 | 5244.75 | 5024.25 | 4738.50 | 4501.13 | 4262.63 | 3981.38 | 3673.69 |
| 45.0   | 5565.38 | 5329.13 | 5108.63 | 4880.81 | 4592.81 | 4358.81 | 4123.69 | 3877.88 | 3546.00 |
| 90.0   | 5407.31 | 5166.00 | 4941.00 | 4685.63 | 4456.13 | 4191.75 | 3913.88 | 3648.38 | 3365.44 |
| 135.0  | 5581.13 | 5290.31 | 5065.88 | 4862.81 | 4574.25 | 4310.44 | 4101.75 | 3780.00 | 3467.81 |
| 180.0  | 5464.69 | 5192.44 | 4967.44 | 4739.06 | 4449.94 | 4211.44 | 3958.88 | 3648.94 | 3317.06 |
| 225.0  | 5564.81 | 5325.75 | 5103.00 | 4844.81 | 4580.44 | 4344.19 | 4069.69 | 3800.25 | 3434.63 |
| 270.0  | 5716.13 | 5492.25 | 5280.19 | 5060.25 | 4772.25 | 4533.75 | 4290.19 | 3967.31 | 3687.75 |
| 315.0  | 5609.25 | 5370.75 | 5149.13 | 4921.31 | 4630.50 | 4395.94 | 4158.56 | 3867.75 | 3549.94 |
| 360.0  | 5655.38 | 5456.25 | 5244.75 | 5024.25 | 4738.50 | 4501.13 | 4262.63 | 3981.38 | 3673.69 |

| C/γ(°) | 18.0    | 19.0    | 20.0    | 21.0    | 22.0    | 23.0    | 24.0    | 25.0    | 26.0   |
|--------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| 0.0    | 3387.38 | 3059.44 | 2731.50 | 2441.25 | 2120.06 | 1863.00 | 1553.06 | 1251.00 | 999.56 |
| 45.0   | 3253.50 | 2953.13 | 2595.94 | 2284.88 | 2010.94 | 1721.81 | 1415.81 | 1159.31 | 885.94 |
| 90.0   | 2996.44 | 2701.13 | 2410.31 | 2058.19 | 1799.44 | 1528.88 | 1112.18 | 961.93  | 739.18 |
| 135.0  | 3205.13 | 2830.50 | 2541.94 | 2241.00 | 1905.75 | 1649.81 | 1376.44 | 1047.94 | 807.19 |
| 180.0  | 3012.75 | 2671.88 | 2376.00 | 2063.81 | 1773.00 | 1504.69 | 1118.42 | 941.29  | 720.39 |
| 225.0  | 3134.81 | 2836.13 | 2542.50 | 2180.25 | 1909.69 | 1649.81 | 1095.24 | 1064.93 | 825.69 |
| 270.0  | 3391.88 | 3093.75 | 2723.63 | 2428.31 | 2107.69 | 1848.94 | 1546.31 | 1249.31 | 999.56 |
| 315.0  | 3257.44 | 2927.81 | 2600.44 | 2307.94 | 1995.75 | 1725.19 | 1428.19 | 1101.88 | 887.29 |
| 360.0  | 3387.38 | 3059.44 | 2731.50 | 2441.25 | 2120.06 | 1863.00 | 1553.06 | 1251.00 | 999.56 |

| C/γ(°) | 27.0   | 28.0   | 29.0   | 30.0   | 31.0   | 32.0  | 33.0  | 34.0  | 35.0  |
|--------|--------|--------|--------|--------|--------|-------|-------|-------|-------|
| 0.0    | 792.56 | 512.44 | 338.63 | 284.06 | 117.62 | 83.19 | 58.89 | 39.88 | 28.07 |
| 45.0   | 663.75 | 451.13 | 295.88 | 164.48 | 98.89  | 66.26 | 46.13 | 32.96 | 23.85 |
| 90.0   | 514.41 | 340.48 | 187.93 | 110.48 | 74.19  | 49.67 | 34.31 | 26.49 | 22.16 |
| 135.0  | 586.13 | 357.75 | 286.31 | 127.24 | 76.05  | 50.06 | 35.10 | 25.26 | 20.25 |
| 180.0  | 520.59 | 304.26 | 177.02 | 111.77 | 70.14  | 49.22 | 34.88 | 24.13 | 19.24 |
| 225.0  | 581.34 | 374.63 | 234.06 | 135.56 | 91.07  | 63.34 | 42.47 | 32.74 | 24.81 |
| 270.0  | 739.69 | 507.38 | 331.88 | 294.19 | 124.76 | 81.00 | 59.23 | 44.10 | 31.73 |
| 315.0  | 659.42 | 417.60 | 269.10 | 162.68 | 95.34  | 67.44 | 48.09 | 33.98 | 25.59 |
| 360.0  | 792.56 | 512.44 | 338.63 | 284.06 | 117.62 | 83.19 | 58.89 | 39.88 | 28.07 |

| C/γ(°) | 36.0  | 37.0  | 38.0  | 39.0  | 40.0  | 41.0  | 42.0  | 43.0  | 44.0  |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0.0    | 21.83 | 17.78 | 15.69 | 14.34 | 13.50 | 12.99 | 12.54 | 12.21 | 11.98 |
| 45.0   | 20.19 | 18.17 | 16.88 | 16.14 | 15.64 | 15.24 | 14.91 | 14.68 | 14.40 |
| 90.0   | 19.41 | 18.28 | 17.49 | 16.88 | 16.48 | 16.14 | 15.86 | 15.58 | 15.41 |
| 135.0  | 18.00 | 16.65 | 15.98 | 15.41 | 14.96 | 14.63 | 14.34 | 14.12 | 13.95 |
| 180.0  | 16.48 | 14.57 | 13.67 | 13.05 | 12.49 | 12.21 | 11.87 | 11.53 | 11.42 |
| 225.0  | 19.91 | 17.94 | 16.54 | 15.41 | 14.91 | 14.46 | 14.12 | 13.84 | 13.67 |
| 270.0  | 25.59 | 21.77 | 18.90 | 17.61 | 16.71 | 16.03 | 15.53 | 15.30 | 15.02 |
| 315.0  | 21.38 | 18.45 | 16.88 | 15.92 | 15.19 | 14.74 | 14.29 | 13.95 | 13.73 |
| 360.0  | 21.83 | 17.78 | 15.69 | 14.34 | 13.50 | 12.99 | 12.54 | 12.21 | 11.98 |

## Nata 2-2182-M

| 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                | 11.76 | 11.64 | 11.48 | 11.36 | 11.25 | 11.25 | 11.19 | 11.14 | 11.08 |                            |  |
| 45.0               | 14.29 | 14.12 | 14.01 | 13.89 | 13.73 | 13.67 | 13.50 | 13.39 | 13.33 |                            |  |
| 90.0               | 15.30 | 15.24 | 15.24 | 15.24 | 15.30 | 15.53 | 15.64 | 15.81 | 15.92 |                            |  |
| 135.0              | 13.78 | 13.56 | 13.44 | 13.39 | 13.28 | 13.16 | 13.11 | 12.94 | 12.94 |                            |  |
| 180.0              | 11.31 | 11.08 | 11.08 | 11.03 | 10.91 | 10.86 | 10.86 | 10.80 | 10.80 |                            |  |
| 225.0              | 13.44 | 13.33 | 13.22 | 13.05 | 12.99 | 12.88 | 12.77 | 12.77 | 12.66 |                            |  |
| 270.0              | 14.79 | 14.57 | 14.40 | 14.34 | 14.23 | 14.18 | 14.23 | 14.29 | 14.29 |                            |  |
| 315.0              | 13.56 | 13.33 | 13.22 | 13.11 | 12.94 | 12.88 | 12.83 | 12.71 | 12.60 |                            |  |
| 360.0              | 11.76 | 11.64 | 11.48 | 11.36 | 11.25 | 11.25 | 11.19 | 11.14 | 11.08 |                            |  |
| C/ $\gamma$ (°)    | 54.0  | 55.0  | 56.0  | 57.0  | 58.0  | 59.0  | 60.0  | 61.0  | 62.0  |                            |  |
| 0.0                | 11.03 | 11.08 | 11.03 | 11.03 | 10.97 | 10.97 | 10.97 | 10.97 | 10.97 |                            |  |
| 45.0               | 13.28 | 13.22 | 13.11 | 13.11 | 13.05 | 12.99 | 12.88 | 12.83 | 12.77 |                            |  |
| 90.0               | 16.09 | 16.26 | 16.31 | 16.48 | 16.59 | 16.76 | 16.93 | 17.38 | 17.78 |                            |  |
| 135.0              | 12.88 | 12.77 | 12.77 | 12.71 | 12.66 | 12.60 | 12.54 | 12.54 | 12.54 |                            |  |
| 180.0              | 10.80 | 10.74 | 10.74 | 10.74 | 10.69 | 10.69 | 10.69 | 10.69 | 10.63 |                            |  |
| 225.0              | 12.54 | 12.49 | 12.49 | 12.38 | 12.43 | 12.38 | 12.32 | 12.32 | 12.26 |                            |  |
| 270.0              | 14.40 | 14.51 | 14.68 | 14.79 | 14.85 | 14.96 | 15.13 | 15.30 | 15.47 |                            |  |
| 315.0              | 12.54 | 12.54 | 12.43 | 12.38 | 12.32 | 12.26 | 12.21 | 12.21 | 12.21 |                            |  |
| 360.0              | 11.03 | 11.08 | 11.03 | 11.03 | 10.97 | 10.97 | 10.97 | 10.97 | 10.97 |                            |  |
| C/ $\gamma$ (°)    | 63.0  | 64.0  | 65.0  | 66.0  | 67.0  | 68.0  | 69.0  | 70.0  | 71.0  |                            |  |
| 0.0                | 10.91 | 10.97 | 10.97 | 10.97 | 10.97 | 10.97 | 11.03 | 11.19 | 11.53 |                            |  |
| 45.0               | 12.71 | 12.66 | 12.60 | 12.54 | 12.49 | 12.49 | 12.49 | 12.38 | 12.26 |                            |  |
| 90.0               | 18.23 | 18.96 | 19.35 | 19.52 | 19.74 | 19.86 | 19.52 | 18.17 | 15.53 |                            |  |
| 135.0              | 12.54 | 12.43 | 12.49 | 12.54 | 12.88 | 13.16 | 13.50 | 14.12 | 14.96 |                            |  |
| 180.0              | 10.63 | 10.63 | 10.58 | 10.63 | 10.69 | 10.74 | 10.97 | 11.19 | 11.53 |                            |  |
| 225.0              | 12.21 | 12.15 | 12.09 | 12.09 | 12.04 | 11.98 | 11.93 | 11.87 | 11.76 |                            |  |
| 270.0              | 15.75 | 16.03 | 16.48 | 16.59 | 16.59 | 16.59 | 16.43 | 15.81 | 14.18 |                            |  |
| 315.0              | 12.21 | 12.15 | 12.15 | 12.15 | 12.32 | 12.77 | 13.22 | 13.84 | 14.79 |                            |  |
| 360.0              | 10.91 | 10.97 | 10.97 | 10.97 | 10.97 | 10.97 | 11.03 | 11.19 | 11.53 |                            |  |
| C/ $\gamma$ (°)    | 72.0  | 73.0  | 74.0  | 75.0  | 76.0  | 77.0  | 78.0  | 79.0  | 80.0  |                            |  |
| 0.0                | 11.81 | 12.15 | 12.49 | 12.54 | 12.21 | 11.48 | 10.91 | 10.35 | 10.13 |                            |  |
| 45.0               | 12.15 | 12.04 | 11.76 | 11.48 | 11.31 | 11.08 | 10.86 | 10.63 | 10.41 |                            |  |
| 90.0               | 12.38 | 11.70 | 11.53 | 11.31 | 11.08 | 10.86 | 10.69 | 10.58 | 10.41 |                            |  |
| 135.0              | 14.74 | 13.67 | 12.54 | 11.93 | 11.48 | 11.31 | 11.14 | 10.86 | 10.63 |                            |  |
| 180.0              | 11.87 | 11.81 | 11.48 | 10.97 | 10.52 | 10.29 | 10.13 | 9.84  | 9.73  |                            |  |
| 225.0              | 11.59 | 11.42 | 11.19 | 11.08 | 10.91 | 10.80 | 10.58 | 10.35 | 10.18 |                            |  |
| 270.0              | 12.66 | 11.87 | 11.53 | 11.42 | 11.19 | 10.97 | 10.74 | 10.58 | 10.41 |                            |  |
| 315.0              | 15.98 | 17.16 | 17.10 | 14.96 | 13.11 | 11.93 | 11.31 | 10.86 | 10.63 |                            |  |
| 360.0              | 11.81 | 12.15 | 12.49 | 12.54 | 12.21 | 11.48 | 10.91 | 10.35 | 10.13 |                            |  |
| C/ $\gamma$ (°)    | 81.0  | 82.0  | 83.0  | 84.0  | 85.0  | 86.0  | 87.0  | 88.0  | 89.0  |                            |  |
| 0.0                | 9.90  | 9.84  | 9.79  | 9.73  | 9.73  | 9.73  | 9.90  | 9.39  | 9.28  |                            |  |
| 45.0               | 10.24 | 10.07 | 9.96  | 9.84  | 9.79  | 9.79  | 9.90  | 9.45  | 9.11  |                            |  |
| 90.0               | 10.24 | 10.07 | 9.96  | 9.90  | 9.84  | 9.90  | 9.68  | 9.23  | 9.06  |                            |  |
| 135.0              | 10.41 | 10.13 | 10.01 | 9.90  | 9.90  | 9.96  | 9.51  | 9.28  | 9.06  |                            |  |
| 180.0              | 9.68  | 9.62  | 9.56  | 9.51  | 9.45  | 9.34  | 9.23  | 9.17  | 9.17  |                            |  |
| 225.0              | 10.01 | 9.84  | 9.73  | 9.62  | 9.51  | 9.39  | 9.11  | 9.06  | 9.06  |                            |  |
| 270.0              | 10.18 | 10.07 | 9.90  | 9.79  | 9.73  | 9.34  | 9.17  | 9.11  | 9.11  |                            |  |
| 315.0              | 10.35 | 10.07 | 9.96  | 9.84  | 9.79  | 9.90  | 9.51  | 9.28  | 9.17  |                            |  |
| 360.0              | 9.90  | 9.84  | 9.79  | 9.73  | 9.73  | 9.73  | 9.90  | 9.39  | 9.28  |                            |  |

## Intensity data(cd)

Appendix Page: 18 Total:18

|                       |      |
|-----------------------|------|
| C/ $\gamma(^{\circ})$ | 90.0 |
| 0.0                   | 9.17 |
| 45.0                  | 9.06 |
| 90.0                  | 9.06 |
| 135.0                 | 9.06 |
| 180.0                 | 9.11 |
| 225.0                 | 9.06 |
| 270.0                 | 9.06 |
| 315.0                 | 9.06 |
| 360.0                 | 9.17 |