



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: 3-1917-E           |                      |
| Luminaire: 92.76.323.00    |                      |
| Report No: NATA0100        | Voltage(V): 218.0000 |
| Test No: GC2019111515      | Current(A): 0.0810   |
| LampCAT: LUMENS EDC-57-20W | Power (W): 17.6000   |
| Lamp flux(lm): 1515.0      | PF: 0.9940           |
| Number of Lamps: 1         | Ballast type: DC     |
| Length(mm): 0              | Width(mm): 0         |
| Phm Type: C                | Height(mm): 0        |

---

## Photometric Results

---

Lumens(lm): 1318.69  
Efficiency(%): 87.04%  
Lumens(lm)/Power(W): 74.93  
Central intensity(cd): 5561.016  
Maximum intensity(cd): 5561.016  
Angle of maximum intensity: C=0.0  $\gamma$ =0.0  
Beam Angle(50%Imax): [C0/180]Total=21.7  
[C90/270]Total=21.7  
Field angle(10%Imax): [C0/180]Total=52.6  
[C90/270]Total=52.6  
Maximum s/h(1/2): C0\_180=0.37 C90\_270=0.37  
Maximum s/h(1/4): C0\_180=0.38 C90\_270=0.38  
Up flux rate of lamp(%): 0.00%  
Down flux rate of lamp(%): 87.04%  
Up flux rate of LUM(%): - -  
Down flux rate of LUM(%): 100.00%  
CIE Type : Direct lighting  
Output flux ratio in  $\pi$  solid angle : 98.467%

| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 0.0                | 5561.016      | 0.000       | 0         | .000%       | .000%      |
| 1.0                | 5527.547      | 5.306       | 5.306     | .350%       | .402%      |
| 2.0                | 5417.578      | 15.709      | 21.015    | 1.037%      | 1.594%     |
| 3.0                | 5247.844      | 25.508      | 46.523    | 1.684%      | 3.528%     |
| 4.0                | 5035.078      | 34.420      | 80.944    | 2.272%      | 6.138%     |
| 5.0                | 4769.789      | 42.180      | 123.124   | 2.784%      | 9.337%     |
| 6.0                | 4459.078      | 48.500      | 171.624   | 3.201%      | 13.015%    |
| 7.0                | 4133.039      | 53.331      | 224.955   | 3.520%      | 17.059%    |
| 8.0                | 3797.930      | 56.760      | 281.715   | 3.747%      | 21.363%    |
| 9.0                | 3434.766      | 58.617      | 340.332   | 3.869%      | 25.808%    |
| 10.0               | 3077.719      | 58.936      | 399.268   | 3.890%      | 30.278%    |
| 11.0               | 2728.828      | 58.019      | 457.287   | 3.830%      | 34.677%    |
| 12.0               | 2396.320      | 56.025      | 513.313   | 3.698%      | 38.926%    |
| 13.0               | 2067.117      | 52.970      | 566.282   | 3.496%      | 42.943%    |
| 14.0               | 1790.297      | 49.375      | 615.657   | 3.259%      | 46.687%    |
| 15.0               | 1560.938      | 46.007      | 661.664   | 3.037%      | 50.176%    |
| 16.0               | 1368.492      | 42.924      | 704.588   | 2.833%      | 53.431%    |
| 17.0               | 1178.381      | 39.662      | 744.25    | 2.618%      | 56.439%    |
| 18.0               | 1059.082      | 36.891      | 781.141   | 2.435%      | 59.236%    |
| 19.0               | 947.461       | 34.910      | 816.051   | 2.304%      | 61.883%    |
| 20.0               | 840.164       | 32.719      | 848.769   | 2.160%      | 64.365%    |
| 21.0               | 756.703       | 30.663      | 879.432   | 2.024%      | 66.690%    |
| 22.0               | 697.816       | 29.229      | 908.662   | 1.929%      | 68.906%    |
| 23.0               | 650.672       | 28.295      | 936.956   | 1.868%      | 71.052%    |
| 24.0               | 613.463       | 27.639      | 964.595   | 1.824%      | 73.148%    |
| 25.0               | 586.294       | 27.280      | 991.875   | 1.801%      | 75.217%    |
| 26.0               | 562.120       | 27.108      | 1018.983  | 1.789%      | 77.272%    |
| 27.0               | 541.702       | 27.005      | 1045.988  | 1.783%      | 79.320%    |
| 28.0               | 521.965       | 26.930      | 1072.918  | 1.778%      | 81.362%    |
| 29.0               | 504.021       | 26.843      | 1099.761  | 1.772%      | 83.398%    |
| 30.0               | 490.746       | 26.859      | 1126.619  | 1.773%      | 85.435%    |
| 31.0               | 477.802       | 26.953      | 1153.573  | 1.779%      | 87.479%    |
| 32.0               | 447.103       | 26.497      | 1180.07   | 1.749%      | 89.488%    |
| 33.0               | 398.925       | 24.924      | 1204.994  | 1.645%      | 91.378%    |
| 34.0               | 337.078       | 22.274      | 1227.268  | 1.470%      | 93.067%    |
| 35.0               | 264.206       | 18.674      | 1245.942  | 1.233%      | 94.483%    |
| 36.0               | 194.484       | 14.605      | 1260.547  | .964%       | 95.591%    |
| 37.0               | 123.701       | 10.377      | 1270.924  | .685%       | 96.378%    |

| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 38.0               | 66.150        | 6.337       | 1277.261  | .418%       | 96.858%    |
| 39.0               | 32.013        | 3.351       | 1280.612  | .221%       | 97.112%    |
| 40.0               | 24.975        | 1.988       | 1282.599  | .131%       | 97.263%    |
| 41.0               | 22.184        | 1.679       | 1284.278  | .111%       | 97.390%    |
| 42.0               | 18.795        | 1.489       | 1285.767  | .098%       | 97.503%    |
| 43.0               | 15.082        | 1.255       | 1287.022  | .083%       | 97.598%    |
| 44.0               | 11.960        | 1.021       | 1288.043  | .067%       | 97.676%    |
| 45.0               | 9.738         | 0.834       | 1288.877  | .055%       | 97.739%    |
| 46.0               | 8.698         | 0.721       | 1289.598  | .048%       | 97.794%    |
| 47.0               | 8.072         | 0.667       | 1290.265  | .044%       | 97.844%    |
| 48.0               | 7.847         | 0.644       | 1290.908  | .042%       | 97.893%    |
| 49.0               | 7.692         | 0.638       | 1291.546  | .042%       | 97.942%    |
| 50.0               | 7.516         | 0.634       | 1292.18   | .042%       | 97.990%    |
| 51.0               | 7.390         | 0.631       | 1292.811  | .042%       | 98.037%    |
| 52.0               | 7.291         | 0.630       | 1293.441  | .042%       | 98.085%    |
| 53.0               | 7.165         | 0.629       | 1294.07   | .042%       | 98.133%    |
| 54.0               | 7.066         | 0.627       | 1294.697  | .041%       | 98.181%    |
| 55.0               | 6.975         | 0.627       | 1295.324  | .041%       | 98.228%    |
| 56.0               | 6.905         | 0.627       | 1295.951  | .041%       | 98.276%    |
| 57.0               | 6.820         | 0.628       | 1296.579  | .041%       | 98.323%    |
| 58.0               | 6.771         | 0.629       | 1297.207  | .041%       | 98.371%    |
| 59.0               | 6.715         | 0.630       | 1297.838  | .042%       | 98.419%    |
| 60.0               | 6.659         | 0.632       | 1298.469  | .042%       | 98.467%    |
| 61.0               | 6.602         | 0.633       | 1299.102  | .042%       | 98.515%    |
| 62.0               | 6.574         | 0.635       | 1299.737  | .042%       | 98.563%    |
| 63.0               | 6.532         | 0.637       | 1300.375  | .042%       | 98.611%    |
| 64.0               | 6.497         | 0.639       | 1301.014  | .042%       | 98.660%    |
| 65.0               | 6.462         | 0.641       | 1301.655  | .042%       | 98.708%    |
| 66.0               | 6.490         | 0.646       | 1302.301  | .043%       | 98.757%    |
| 67.0               | 6.490         | 0.653       | 1302.954  | .043%       | 98.807%    |
| 68.0               | 6.469         | 0.656       | 1303.61   | .043%       | 98.856%    |
| 69.0               | 6.483         | 0.661       | 1304.271  | .044%       | 98.907%    |
| 70.0               | 6.581         | 0.671       | 1304.942  | .044%       | 98.957%    |
| 71.0               | 6.701         | 0.686       | 1305.629  | .045%       | 99.009%    |
| 72.0               | 6.863         | 0.705       | 1306.334  | .047%       | 99.063%    |
| 73.0               | 6.996         | 0.725       | 1307.059  | .048%       | 99.118%    |
| 74.0               | 7.179         | 0.745       | 1307.804  | .049%       | 99.174%    |
| 75.0               | 7.383         | 0.769       | 1308.573  | .051%       | 99.233%    |

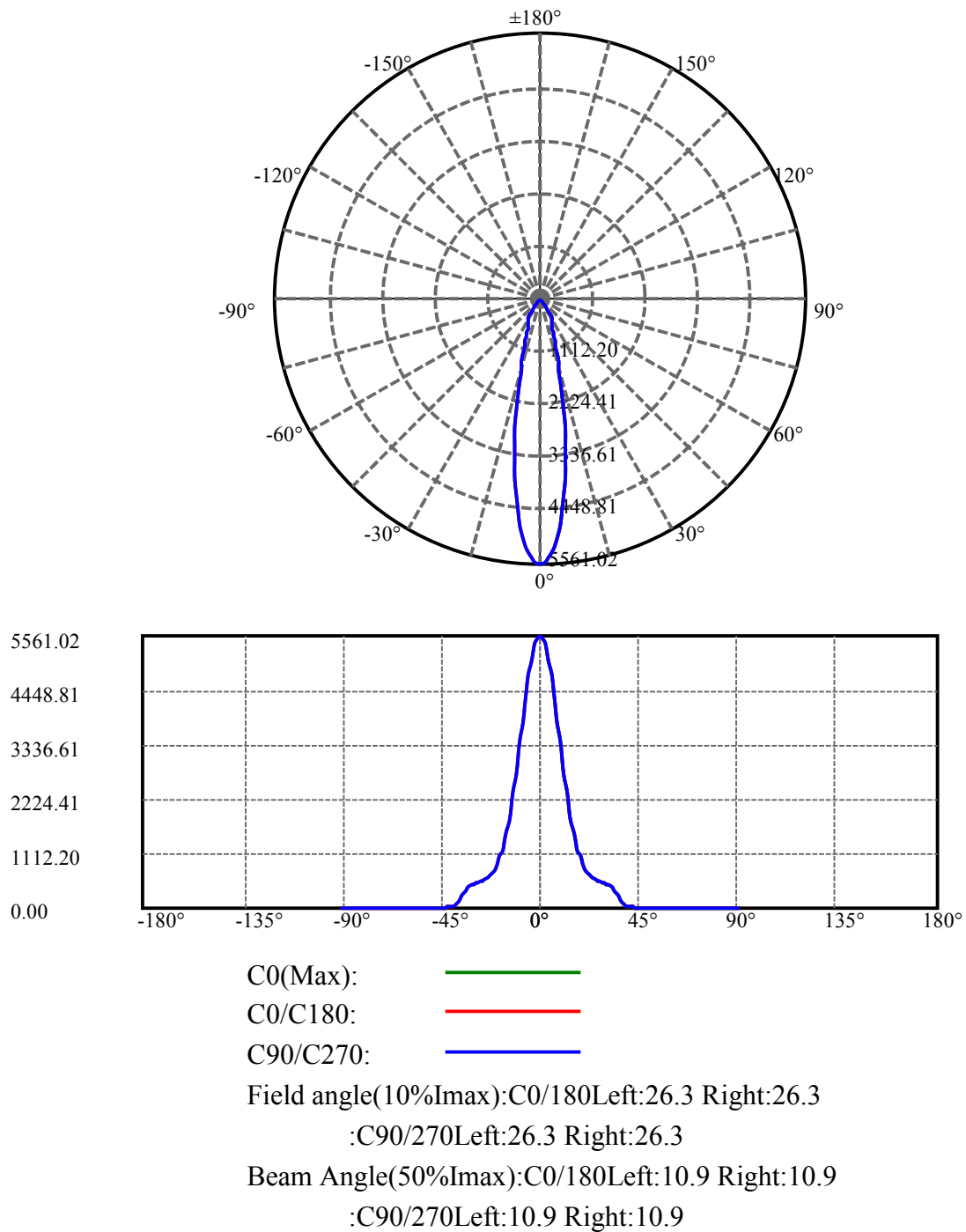
| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 76.0               | 7.052         | 0.766       | 1309.339  | .051%       | 99.291%    |
| 77.0               | 6.539         | 0.725       | 1310.064  | .048%       | 99.346%    |
| 78.0               | 6.356         | 0.690       | 1310.754  | .046%       | 99.398%    |
| 79.0               | 6.307         | 0.680       | 1311.435  | .045%       | 99.450%    |
| 80.0               | 6.195         | 0.674       | 1312.109  | .044%       | 99.501%    |
| 81.0               | 6.138         | 0.667       | 1312.776  | .044%       | 99.551%    |
| 82.0               | 6.089         | 0.663       | 1313.439  | .044%       | 99.602%    |
| 83.0               | 6.068         | 0.661       | 1314.1    | .044%       | 99.652%    |
| 84.0               | 6.061         | 0.661       | 1314.76   | .044%       | 99.702%    |
| 85.0               | 6.026         | 0.660       | 1315.42   | .044%       | 99.752%    |
| 86.0               | 6.019         | 0.658       | 1316.078  | .043%       | 99.802%    |
| 87.0               | 6.005         | 0.658       | 1316.736  | .043%       | 99.852%    |
| 88.0               | 5.963         | 0.656       | 1317.392  | .043%       | 99.902%    |
| 89.0               | 5.913         | 0.651       | 1318.043  | .043%       | 99.951%    |
| 90.0               | 5.899         | 0.648       | 1318.691  | .043%       | 100.000%   |

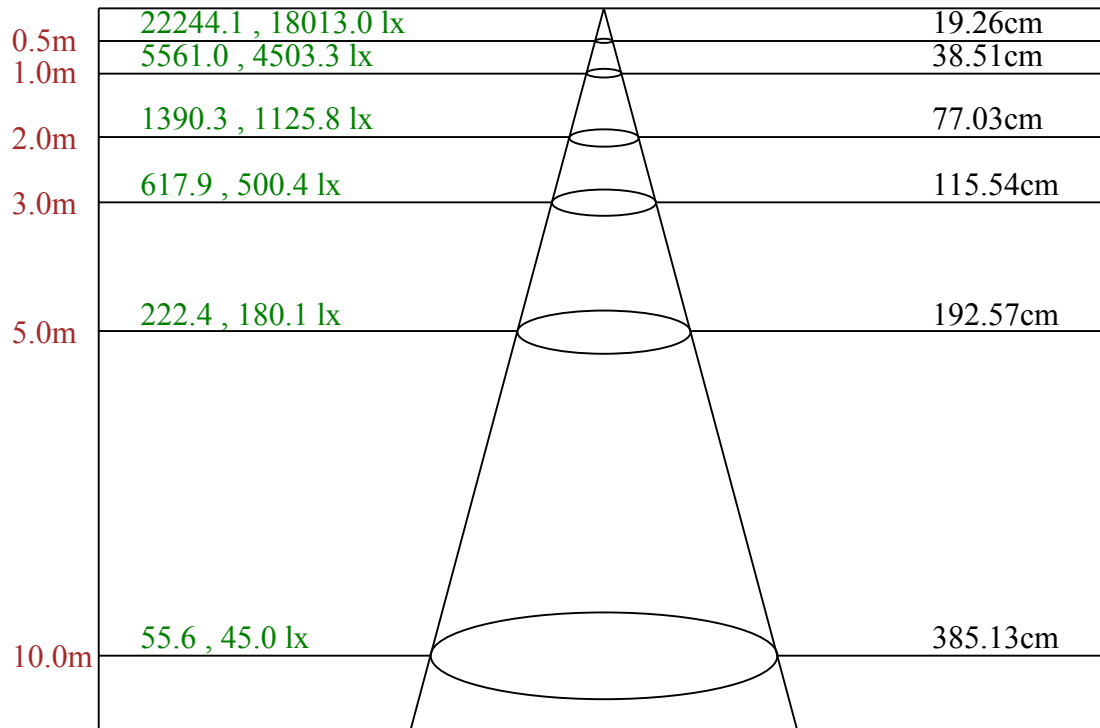
## ZONAL LUMEN SUMMARY

| Zone    | Lumens  | %Lamp  | %Fixt   |
|---------|---------|--------|---------|
| 0-30    | 1126.62 | 74.36% | 85.43%  |
| 0-40    | 1282.60 | 84.66% | 97.26%  |
| 0-60    | 1298.47 | 85.71% | 98.47%  |
| 0-90    | 1318.04 | 87.00% | 99.95%  |
| 0-120   | 1318.04 | 87.00% | 99.95%  |
| 0-180   | 1318.69 | 87.04% | 100.00% |
| 60-90   | 20.21   | 1.33%  | 1.53%   |
| 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%   |
| 0-27.33 | 1054.95 | 69.63% | 80.00%  |

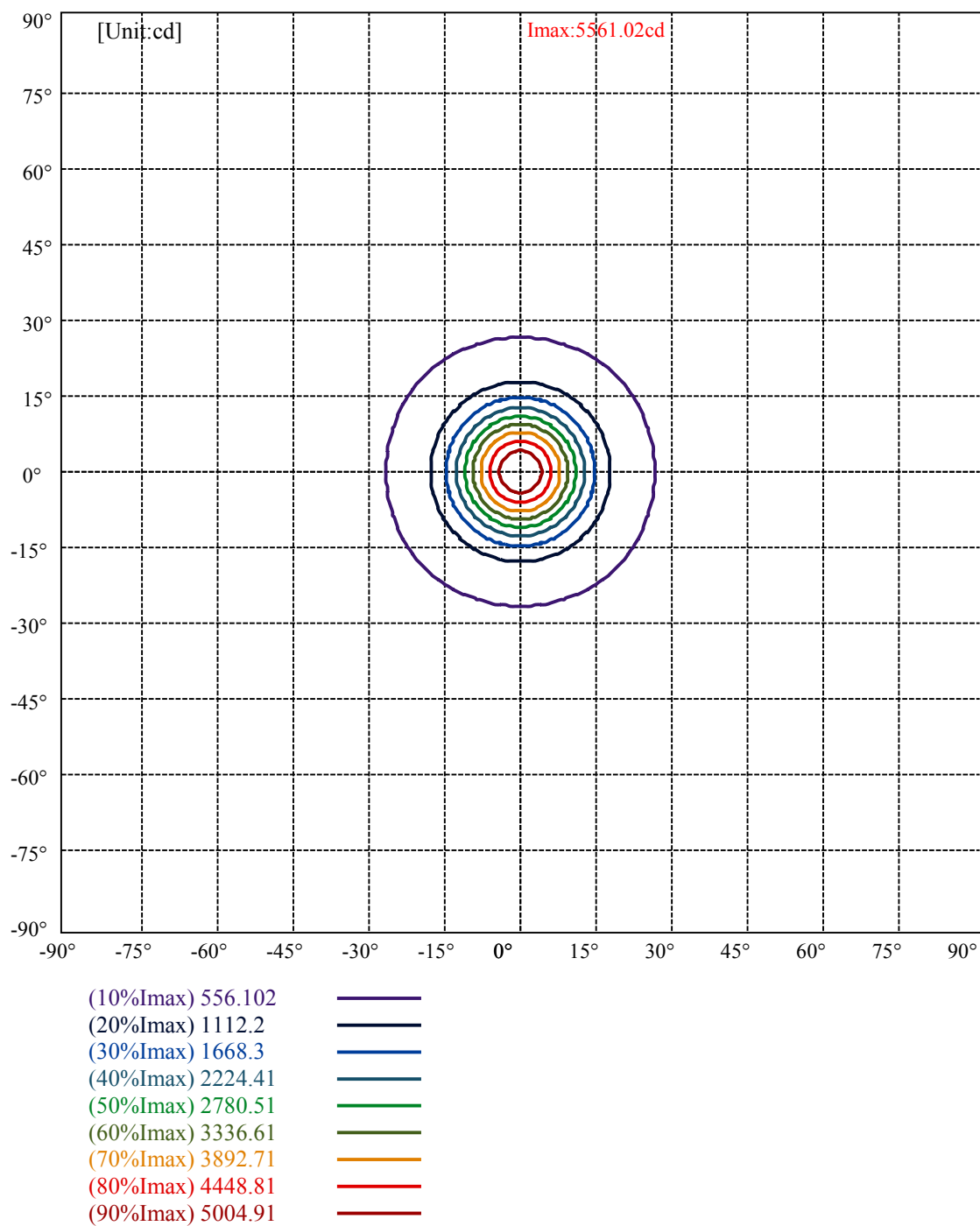
## ZONAL LUMEN SUMMARY

|         |        |
|---------|--------|
| 0-10    | 399.27 |
| 10-20   | 449.50 |
| 20-30   | 277.85 |
| 30-40   | 155.98 |
| 40-50   | 9.58   |
| 50-60   | 6.29   |
| 60-70   | 6.47   |
| 70-80   | 7.17   |
| 80-90   | 5.93   |
| 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   |

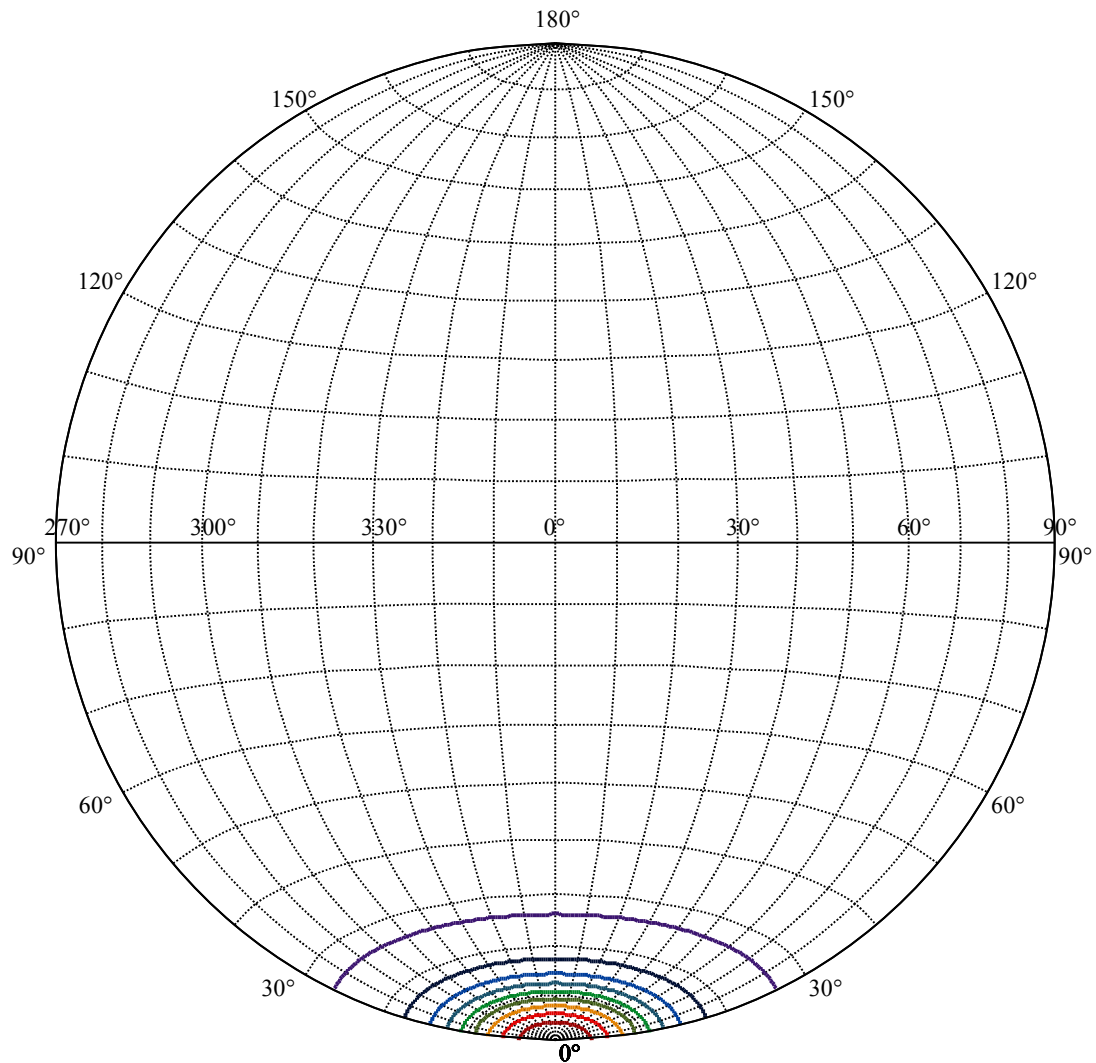




Max , Ave      Beam angle of C0 plane 21.80







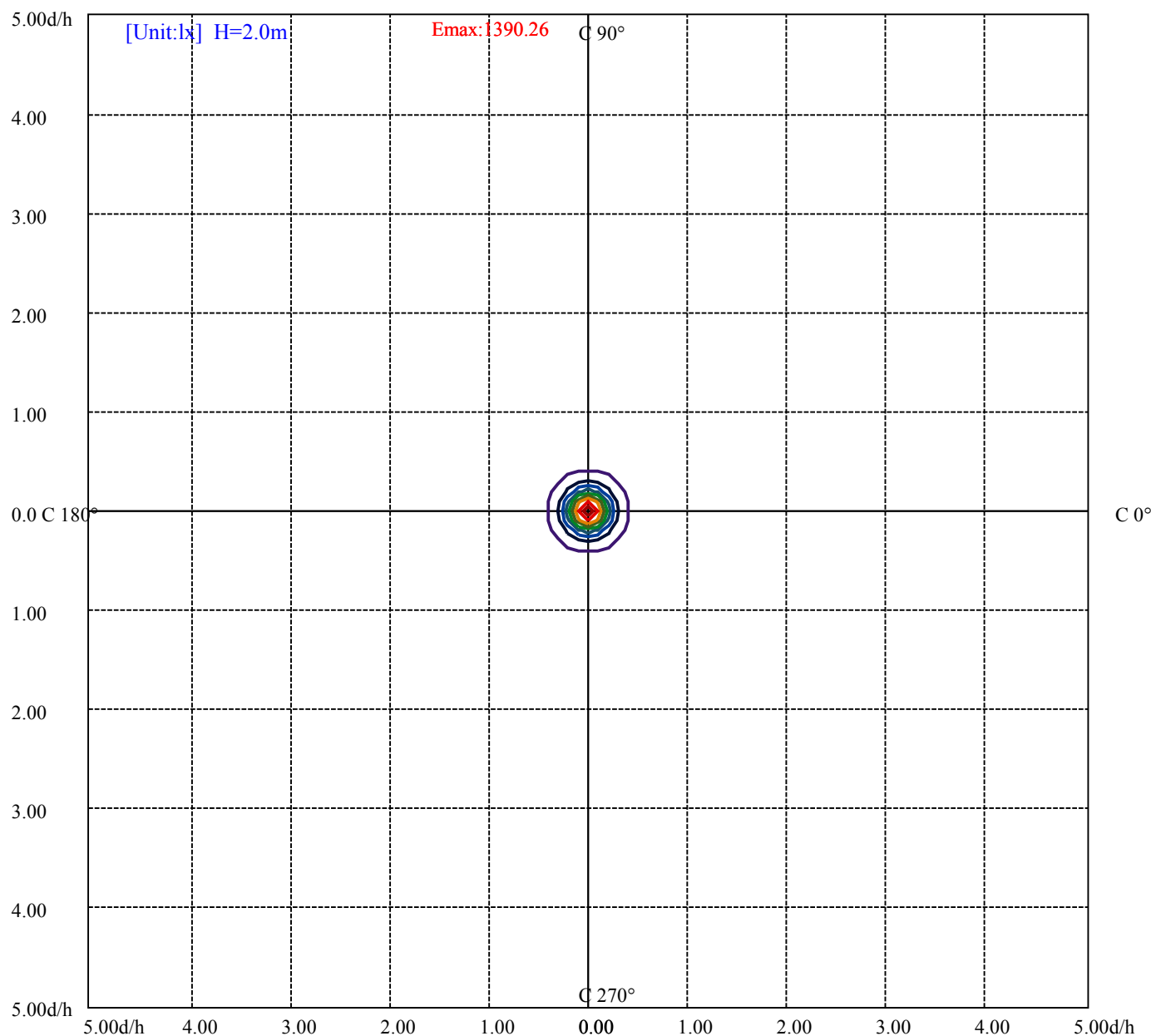
House

[Unit:cd]

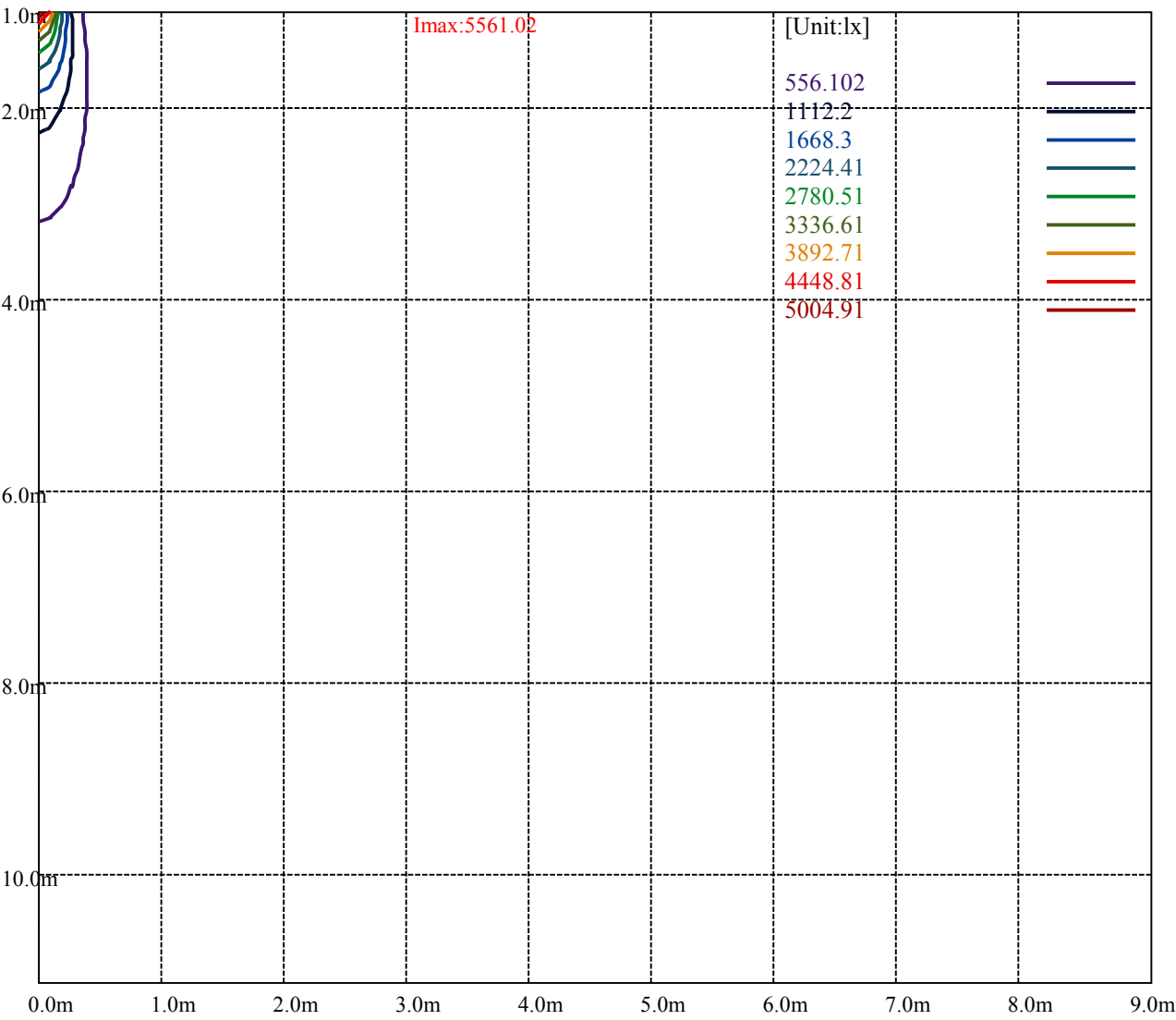
Road

Imax:5561.02

|           |         |   |
|-----------|---------|---|
| (10%Imax) | 556.102 | — |
| (20%Imax) | 1112.2  | — |
| (30%Imax) | 1668.3  | — |
| (40%Imax) | 2224.41 | — |
| (50%Imax) | 2780.51 | — |
| (60%Imax) | 3336.61 | — |
| (70%Imax) | 3892.71 | — |
| (80%Imax) | 4448.81 | — |
| (90%Imax) | 5004.91 | — |



|                    |   |
|--------------------|---|
| (10%Emax) 139.0253 | — |
| (20%Emax) 278.05   | — |
| (30%Emax) 417.075  | — |
| (40%Emax) 556.1    | — |
| (50%Emax) 695.1275 | — |
| (60%Emax) 834.1525 | — |
| (70%Emax) 973.1775 | — |
| (80%Emax) 1112.203 | — |
| (90%Emax) 1251.228 | — |



Luminance Table

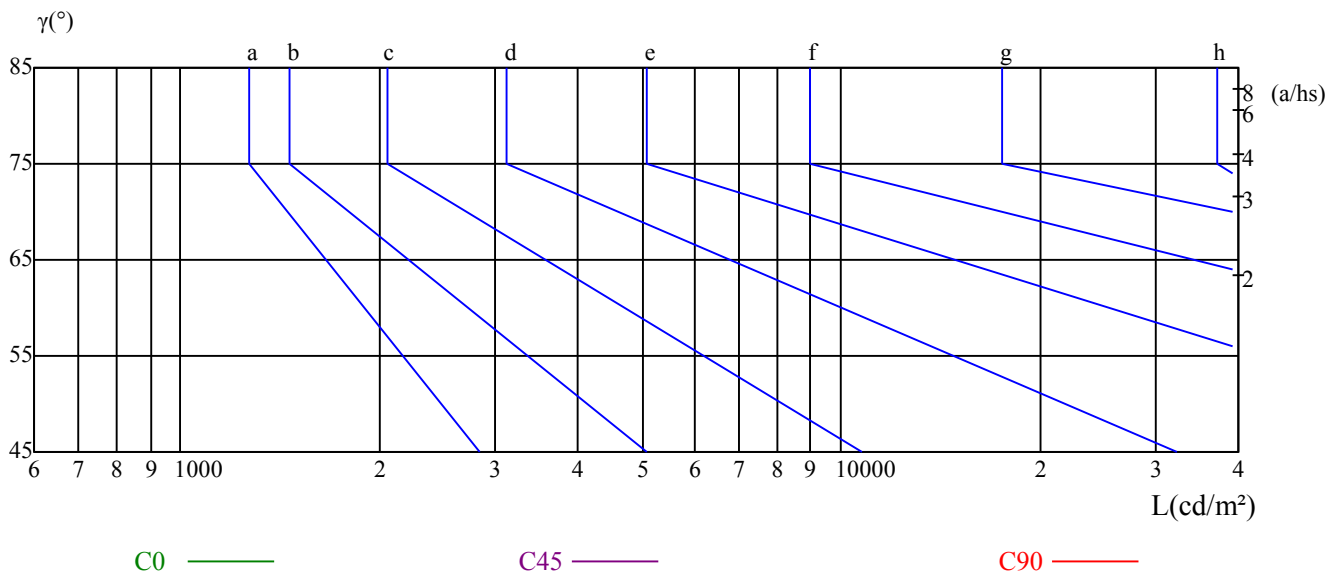
| $\gamma$ | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 |
|----------|----|----|----|----|----|----|----|----|----|
| C0       | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| C45      | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| C90      | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |

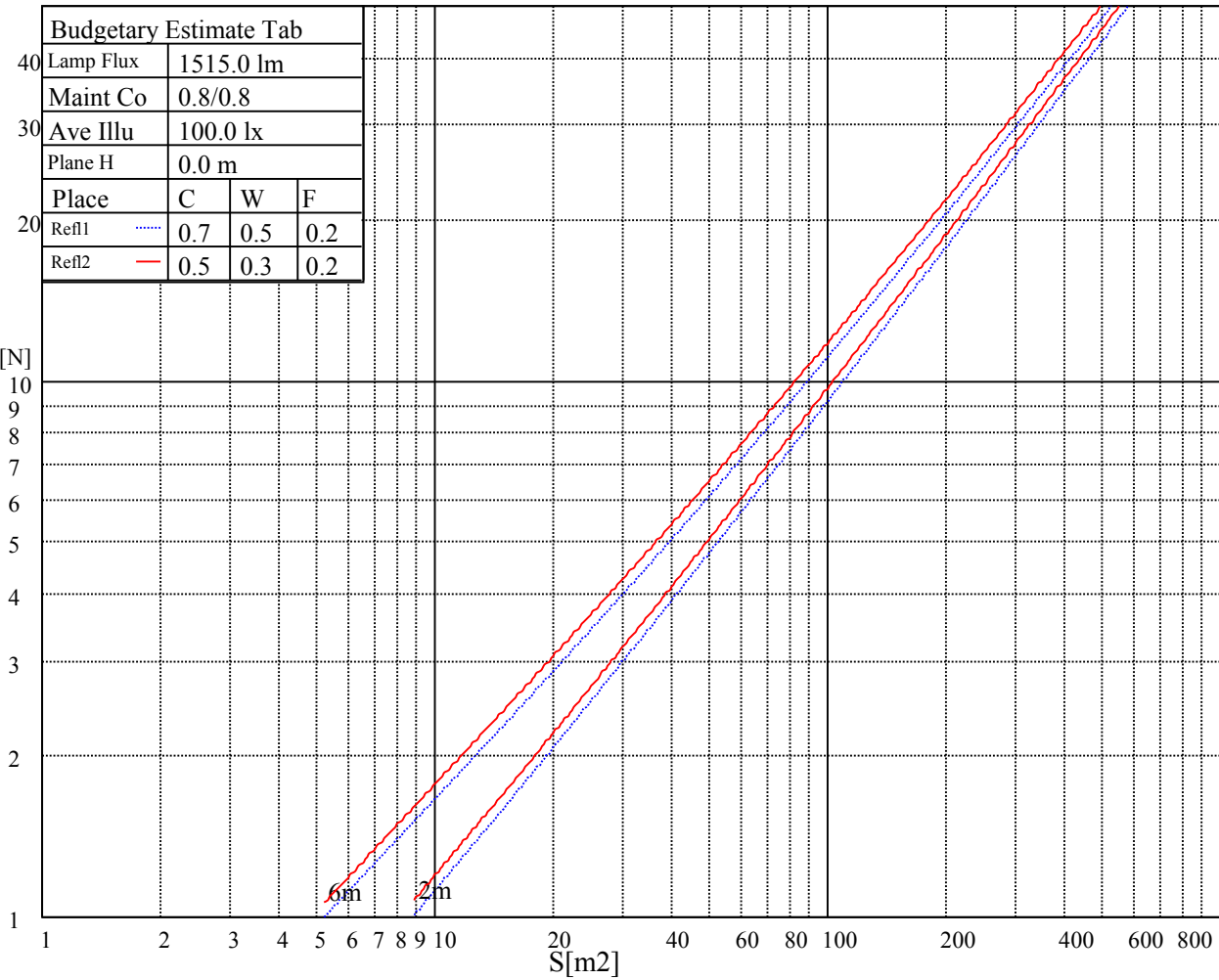
| L(Hor)(65) | L(Ver)(65) | L45(65) | L(Hor)(75) | L(Ver)(75) | L45(75) | L(Hor)(85) | L(Ver)(85) | L45(85) |
|------------|------------|---------|------------|------------|---------|------------|------------|---------|
| 0          | 0          | 0       | 0          | 0          | 0       | 0     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

Glare Table

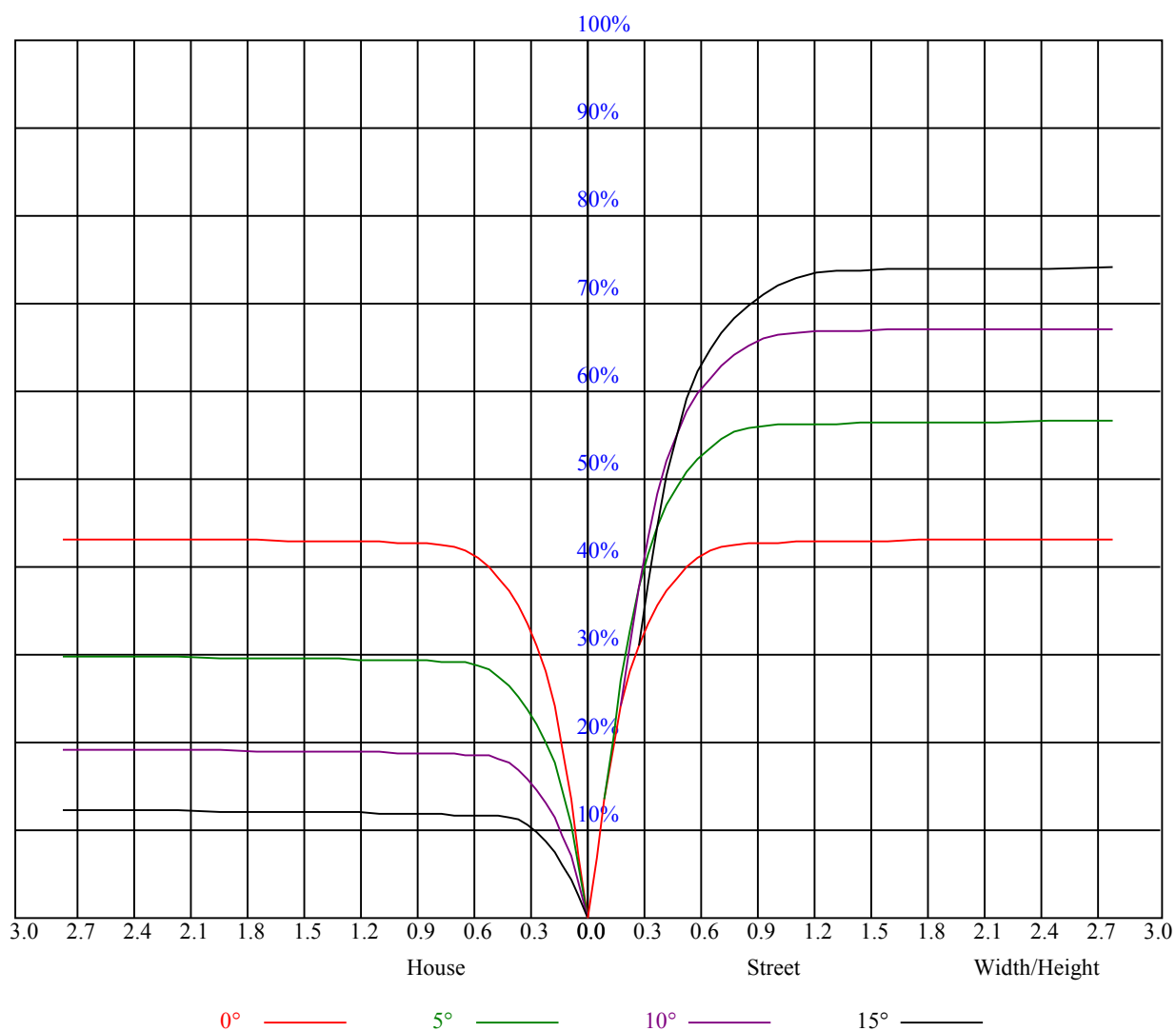
| Glare | Quality | Service Values Illuminance(lx) |      |      |            |            |            |            |            |
|-------|---------|--------------------------------|------|------|------------|------------|------------|------------|------------|
| 1.15  | A       | 2000                           | 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    | 1.04                                    | 1.04 | 1.04 | 1.01 | 1.01 | 1.01 | 0.97 | 0.97 | 0.97 | 0.93 | 0.93 | 0.93 | 0.89 | 0.89 | 0.89 | 0.87 |
| 1    | 0.97                                    | 0.95 | 0.94 | 0.95 | 0.94 | 0.92 | 0.92 | 0.91 | 0.89 | 0.89 | 0.88 | 0.87 | 0.86 | 0.85 | 0.84 | 0.83 |
| 2    | 0.92                                    | 0.89 | 0.87 | 0.91 | 0.88 | 0.86 | 0.88 | 0.86 | 0.84 | 0.85 | 0.83 | 0.82 | 0.83 | 0.82 | 0.80 | 0.79 |
| 3    | 0.87                                    | 0.84 | 0.81 | 0.86 | 0.83 | 0.80 | 0.84 | 0.81 | 0.79 | 0.82 | 0.80 | 0.78 | 0.80 | 0.78 | 0.77 | 0.75 |
| 4    | 0.83                                    | 0.79 | 0.76 | 0.82 | 0.79 | 0.76 | 0.81 | 0.77 | 0.75 | 0.79 | 0.76 | 0.74 | 0.77 | 0.75 | 0.73 | 0.72 |
| 5    | 0.80                                    | 0.75 | 0.72 | 0.79 | 0.75 | 0.72 | 0.77 | 0.74 | 0.72 | 0.76 | 0.73 | 0.71 | 0.75 | 0.72 | 0.70 | 0.69 |
| 6    | 0.76                                    | 0.72 | 0.69 | 0.76 | 0.72 | 0.69 | 0.74 | 0.71 | 0.68 | 0.73 | 0.70 | 0.68 | 0.72 | 0.70 | 0.68 | 0.67 |
| 7    | 0.73                                    | 0.69 | 0.66 | 0.73 | 0.69 | 0.66 | 0.72 | 0.68 | 0.66 | 0.71 | 0.68 | 0.65 | 0.70 | 0.67 | 0.65 | 0.64 |
| 8    | 0.70                                    | 0.66 | 0.64 | 0.70 | 0.66 | 0.63 | 0.69 | 0.66 | 0.63 | 0.68 | 0.65 | 0.63 | 0.68 | 0.65 | 0.63 | 0.62 |
| 9    | 0.68                                    | 0.64 | 0.61 | 0.68 | 0.64 | 0.61 | 0.67 | 0.63 | 0.61 | 0.66 | 0.63 | 0.61 | 0.66 | 0.63 | 0.61 | 0.60 |
| 10   | 0.66                                    | 0.62 | 0.59 | 0.65 | 0.62 | 0.59 | 0.65 | 0.61 | 0.59 | 0.64 | 0.61 | 0.59 | 0.64 | 0.61 | 0.59 | 0.58 |



| Intensity data(cd) |         |         |         |         |         |         |         |         | Appendix Page: 16 Total:18 |  |
|--------------------|---------|---------|---------|---------|---------|---------|---------|---------|----------------------------|--|
| C/ $\gamma$ (°)    | 0.0     | 1.0     | 2.0     | 3.0     | 4.0     | 5.0     | 6.0     | 7.0     | 8.0                        |  |
| 0.0                | 5564.81 | 5561.44 | 5472.00 | 5333.63 | 5142.94 | 4848.75 | 4581.56 | 4288.50 | 3944.81                    |  |
| 45.0               | 5554.69 | 5541.19 | 5451.75 | 5295.38 | 5105.25 | 4843.69 | 4542.75 | 4242.38 | 3926.81                    |  |
| 90.0               | 5554.69 | 5496.19 | 5378.06 | 5184.00 | 4933.69 | 4671.00 | 4332.38 | 3970.13 | 3639.38                    |  |
| 135.0              | 5569.88 | 5550.19 | 5438.25 | 5286.94 | 5091.75 | 4825.69 | 4516.88 | 4209.75 | 3845.81                    |  |
| 180.0              | 5564.81 | 5507.44 | 5371.31 | 5167.69 | 4937.63 | 4635.00 | 4336.31 | 3983.06 | 3615.75                    |  |
| 225.0              | 5554.69 | 5492.81 | 5378.63 | 5188.50 | 4940.44 | 4681.69 | 4394.25 | 4003.31 | 3673.69                    |  |
| 270.0              | 5554.69 | 5542.88 | 5457.38 | 5297.63 | 5103.56 | 4899.38 | 4521.94 | 4219.31 | 3946.50                    |  |
| 315.0              | 5569.88 | 5528.25 | 5393.25 | 5229.00 | 5025.38 | 4753.13 | 4446.56 | 4147.88 | 3790.69                    |  |
| 360.0              | 5564.81 | 5561.44 | 5472.00 | 5333.63 | 5142.94 | 4848.75 | 4581.56 | 4288.50 | 3944.81                    |  |
| C/ $\gamma$ (°)    | 9.0     | 10.0    | 11.0    | 12.0    | 13.0    | 14.0    | 15.0    | 16.0    | 17.0                       |  |
| 0.0                | 3592.13 | 3270.94 | 2905.31 | 2583.56 | 2240.44 | 1924.88 | 1677.38 | 1439.44 | 1249.88                    |  |
| 45.0               | 3512.81 | 3171.38 | 2834.44 | 2471.06 | 2136.94 | 1870.88 | 1612.69 | 1397.25 | 1238.06                    |  |
| 90.0               | 3308.06 | 2939.63 | 2585.81 | 2286.00 | 1940.06 | 1699.88 | 1494.00 | 1321.31 | 1118.70                    |  |
| 135.0              | 3468.94 | 3128.63 | 2751.19 | 2424.94 | 2086.31 | 1790.44 | 1571.06 | 1387.69 | 1196.44                    |  |
| 180.0              | 3287.25 | 2919.94 | 2557.13 | 2250.56 | 1964.81 | 1657.69 | 1456.31 | 1290.38 | 1117.74                    |  |
| 225.0              | 3339.56 | 2923.31 | 2592.56 | 2275.88 | 1956.94 | 1688.63 | 1489.50 | 1302.19 | 1112.51                    |  |
| 270.0              | 3508.31 | 3187.13 | 2904.19 | 2503.69 | 2166.19 | 1928.25 | 1635.19 | 1439.44 | 1276.31                    |  |
| 315.0              | 3461.06 | 3080.81 | 2700.00 | 2374.88 | 2045.25 | 1761.75 | 1551.38 | 1370.25 | 1117.41                    |  |
| 360.0              | 3592.13 | 3270.94 | 2905.31 | 2583.56 | 2240.44 | 1924.88 | 1677.38 | 1439.44 | 1249.88                    |  |
| C/ $\gamma$ (°)    | 18.0    | 19.0    | 20.0    | 21.0    | 22.0    | 23.0    | 24.0    | 25.0    | 26.0                       |  |
| 0.0                | 1114.31 | 999.00  | 871.88  | 786.38  | 718.31  | 662.06  | 619.88  | 590.63  | 564.75                     |  |
| 45.0               | 1082.25 | 963.00  | 850.50  | 753.19  | 691.31  | 645.19  | 606.94  | 582.19  | 562.50                     |  |
| 90.0               | 1014.81 | 908.16  | 804.94  | 728.16  | 676.07  | 631.29  | 599.18  | 575.66  | 552.49                     |  |
| 135.0              | 1065.94 | 952.88  | 835.31  | 758.81  | 700.31  | 657.56  | 614.25  | 588.94  | 567.00                     |  |
| 180.0              | 1002.77 | 903.94  | 801.56  | 737.61  | 688.05  | 640.52  | 613.01  | 584.21  | 556.59                     |  |
| 225.0              | 1026.39 | 913.22  | 827.83  | 749.25  | 690.64  | 648.96  | 615.38  | 583.82  | 558.90                     |  |
| 270.0              | 1109.25 | 993.94  | 894.38  | 790.88  | 727.31  | 679.50  | 633.94  | 605.25  | 579.94                     |  |
| 315.0              | 1056.94 | 945.56  | 834.92  | 749.36  | 690.53  | 640.29  | 605.14  | 579.66  | 554.79                     |  |
| 360.0              | 1114.31 | 999.00  | 871.88  | 786.38  | 718.31  | 662.06  | 619.88  | 590.63  | 564.75                     |  |
| C/ $\gamma$ (°)    | 27.0    | 28.0    | 29.0    | 30.0    | 31.0    | 32.0    | 33.0    | 34.0    | 35.0                       |  |
| 0.0                | 541.13  | 524.81  | 505.69  | 493.31  | 480.94  | 463.50  | 425.81  | 367.88  | 295.88                     |  |
| 45.0               | 541.13  | 525.38  | 509.06  | 494.44  | 483.19  | 466.31  | 419.63  | 351.00  | 286.31                     |  |
| 90.0               | 535.61  | 516.83  | 500.06  | 488.31  | 476.21  | 436.16  | 388.69  | 328.22  | 238.84                     |  |
| 135.0              | 546.75  | 524.81  | 509.06  | 493.88  | 479.81  | 453.38  | 397.13  | 334.69  | 286.88                     |  |
| 180.0              | 538.37  | 517.84  | 496.80  | 485.10  | 468.00  | 415.35  | 369.11  | 305.78  | 229.28                     |  |
| 225.0              | 538.71  | 518.18  | 499.33  | 486.84  | 474.41  | 432.90  | 377.04  | 312.75  | 238.33                     |  |
| 270.0              | 556.31  | 533.25  | 515.81  | 500.06  | 486.56  | 466.31  | 421.31  | 367.31  | 291.38                     |  |
| 315.0              | 535.61  | 514.63  | 496.35  | 484.03  | 473.29  | 442.91  | 392.68  | 329.01  | 246.77                     |  |
| 360.0              | 541.13  | 524.81  | 505.69  | 493.31  | 480.94  | 463.50  | 425.81  | 367.88  | 295.88                     |  |
| C/ $\gamma$ (°)    | 36.0    | 37.0    | 38.0    | 39.0    | 40.0    | 41.0    | 42.0    | 43.0    | 44.0                       |  |
| 0.0                | 286.88  | 156.21  | 90.34   | 44.94   | 26.61   | 24.30   | 20.81   | 17.61   | 15.19                      |  |
| 45.0               | 210.09  | 146.48  | 80.61   | 36.84   | 26.55   | 23.96   | 20.14   | 16.43   | 13.39                      |  |
| 90.0               | 165.94  | 105.02  | 55.07   | 27.45   | 24.24   | 21.60   | 18.68   | 15.08   | 10.91                      |  |
| 135.0              | 188.04  | 126.00  | 70.54   | 29.70   | 24.41   | 21.71   | 18.00   | 14.51   | 11.76                      |  |
| 180.0              | 154.24  | 97.37   | 49.11   | 26.33   | 23.68   | 20.48   | 16.88   | 13.05   | 10.46                      |  |
| 225.0              | 165.38  | 103.28  | 48.09   | 26.04   | 23.46   | 20.48   | 17.33   | 13.33   | 9.73                       |  |
| 270.0              | 202.89  | 134.49  | 80.21   | 35.83   | 26.04   | 23.46   | 19.86   | 16.14   | 12.77                      |  |
| 315.0              | 182.42  | 120.77  | 55.24   | 28.97   | 24.81   | 21.49   | 18.68   | 14.51   | 11.48                      |  |
| 360.0              | 286.88  | 156.21  | 90.34   | 44.94   | 26.61   | 24.30   | 20.81   | 17.61   | 15.19                      |  |



## Intensity data(cd)

|                 |       |       |       |       |      |      |      |      |      |
|-----------------|-------|-------|-------|-------|------|------|------|------|------|
| C/ $\gamma$ (°) | 45.0  | 46.0  | 47.0  | 48.0  | 49.0 | 50.0 | 51.0 | 52.0 | 53.0 |
| 0.0             | 9.79  | 8.83  | 8.33  | 7.93  | 7.76 | 7.59 | 7.43 | 7.31 | 7.14 |
| 45.0            | 11.42 | 9.90  | 8.10  | 7.88  | 7.71 | 7.54 | 7.43 | 7.31 | 7.20 |
| 90.0            | 9.23  | 8.49  | 8.10  | 7.88  | 7.76 | 7.59 | 7.48 | 7.37 | 7.26 |
| 135.0           | 9.68  | 8.61  | 8.16  | 7.93  | 7.76 | 7.65 | 7.48 | 7.37 | 7.26 |
| 180.0           | 9.17  | 8.16  | 7.88  | 7.71  | 7.59 | 7.43 | 7.26 | 7.20 | 7.09 |
| 225.0           | 9.00  | 8.33  | 7.88  | 7.76  | 7.59 | 7.43 | 7.31 | 7.20 | 7.09 |
| 270.0           | 10.41 | 8.89  | 8.21  | 7.88  | 7.71 | 7.48 | 7.43 | 7.31 | 7.20 |
| 315.0           | 9.23  | 8.38  | 7.93  | 7.82  | 7.65 | 7.43 | 7.31 | 7.26 | 7.09 |
| 360.0           | 9.79  | 8.83  | 8.33  | 7.93  | 7.76 | 7.59 | 7.43 | 7.31 | 7.14 |
| C/ $\gamma$ (°) | 54.0  | 55.0  | 56.0  | 57.0  | 58.0 | 59.0 | 60.0 | 61.0 | 62.0 |
| 0.0             | 7.09  | 6.92  | 6.92  | 6.81  | 6.75 | 6.69 | 6.64 | 6.58 | 6.53 |
| 45.0            | 7.09  | 7.03  | 6.98  | 6.86  | 6.81 | 6.75 | 6.69 | 6.64 | 6.64 |
| 90.0            | 7.14  | 7.09  | 6.98  | 6.92  | 6.86 | 6.75 | 6.75 | 6.69 | 6.64 |
| 135.0           | 7.14  | 7.03  | 6.98  | 6.92  | 6.86 | 6.81 | 6.75 | 6.69 | 6.64 |
| 180.0           | 7.03  | 6.92  | 6.92  | 6.81  | 6.69 | 6.69 | 6.64 | 6.58 | 6.58 |
| 225.0           | 6.98  | 6.92  | 6.81  | 6.75  | 6.69 | 6.64 | 6.58 | 6.53 | 6.53 |
| 270.0           | 7.03  | 6.98  | 6.86  | 6.75  | 6.75 | 6.69 | 6.64 | 6.53 | 6.53 |
| 315.0           | 7.03  | 6.92  | 6.81  | 6.75  | 6.75 | 6.69 | 6.58 | 6.58 | 6.53 |
| 360.0           | 7.09  | 6.92  | 6.92  | 6.81  | 6.75 | 6.69 | 6.64 | 6.58 | 6.53 |
| C/ $\gamma$ (°) | 63.0  | 64.0  | 65.0  | 66.0  | 67.0 | 68.0 | 69.0 | 70.0 | 71.0 |
| 0.0             | 6.53  | 6.47  | 6.47  | 6.47  | 6.47 | 6.47 | 6.53 | 6.53 | 6.47 |
| 45.0            | 6.58  | 6.53  | 6.53  | 6.58  | 6.64 | 6.58 | 6.58 | 6.64 | 6.58 |
| 90.0            | 6.64  | 6.53  | 6.47  | 6.47  | 6.47 | 6.41 | 6.41 | 6.41 | 6.47 |
| 135.0           | 6.64  | 6.64  | 6.64  | 6.69  | 6.69 | 6.69 | 6.69 | 7.43 | 8.33 |
| 180.0           | 6.53  | 6.47  | 6.47  | 6.47  | 6.47 | 6.47 | 6.58 | 6.64 | 6.81 |
| 225.0           | 6.41  | 6.41  | 6.36  | 6.41  | 6.36 | 6.36 | 6.30 | 6.30 | 6.30 |
| 270.0           | 6.47  | 6.47  | 6.41  | 6.47  | 6.47 | 6.47 | 6.47 | 6.41 | 6.36 |
| 315.0           | 6.47  | 6.47  | 6.36  | 6.36  | 6.36 | 6.30 | 6.30 | 6.30 | 6.30 |
| 360.0           | 6.53  | 6.47  | 6.47  | 6.47  | 6.47 | 6.47 | 6.53 | 6.53 | 6.47 |
| C/ $\gamma$ (°) | 72.0  | 73.0  | 74.0  | 75.0  | 76.0 | 77.0 | 78.0 | 79.0 | 80.0 |
| 0.0             | 6.47  | 6.47  | 6.47  | 6.86  | 7.03 | 6.98 | 6.98 | 6.81 | 6.36 |
| 45.0            | 6.58  | 6.81  | 7.31  | 7.88  | 7.48 | 6.30 | 6.24 | 6.24 | 6.19 |
| 90.0            | 6.47  | 6.53  | 6.47  | 6.47  | 6.41 | 6.41 | 6.41 | 6.36 | 6.24 |
| 135.0           | 9.34  | 10.13 | 11.08 | 11.93 | 9.84 | 7.26 | 6.30 | 6.30 | 6.24 |
| 180.0           | 7.03  | 7.26  | 7.26  | 7.31  | 7.14 | 6.92 | 6.53 | 6.41 | 6.24 |
| 225.0           | 6.36  | 6.30  | 6.24  | 6.24  | 6.19 | 6.13 | 6.08 | 6.13 | 6.08 |
| 270.0           | 6.36  | 6.24  | 6.36  | 6.19  | 6.13 | 6.13 | 6.13 | 6.08 | 6.08 |
| 315.0           | 6.30  | 6.24  | 6.24  | 6.19  | 6.19 | 6.19 | 6.19 | 6.13 | 6.13 |
| 360.0           | 6.47  | 6.47  | 6.47  | 6.86  | 7.03 | 6.98 | 6.98 | 6.81 | 6.36 |
| C/ $\gamma$ (°) | 81.0  | 82.0  | 83.0  | 84.0  | 85.0 | 86.0 | 87.0 | 88.0 | 89.0 |
| 0.0             | 6.13  | 6.08  | 6.08  | 6.08  | 6.02 | 6.02 | 6.02 | 6.02 | 5.96 |
| 45.0            | 6.19  | 6.13  | 6.08  | 6.08  | 6.02 | 6.02 | 6.02 | 6.02 | 5.91 |
| 90.0            | 6.19  | 6.13  | 6.08  | 6.08  | 6.08 | 6.02 | 6.02 | 5.96 | 5.91 |
| 135.0           | 6.19  | 6.19  | 6.19  | 6.13  | 6.08 | 6.08 | 6.08 | 5.96 | 5.91 |
| 180.0           | 6.19  | 6.13  | 6.08  | 6.08  | 6.02 | 6.02 | 5.96 | 5.91 | 5.91 |
| 225.0           | 6.08  | 5.96  | 6.02  | 5.96  | 5.96 | 6.02 | 5.96 | 5.91 | 5.91 |
| 270.0           | 6.08  | 6.02  | 6.02  | 6.02  | 6.02 | 6.02 | 6.02 | 5.96 | 5.91 |
| 315.0           | 6.08  | 6.08  | 6.02  | 6.08  | 6.02 | 5.96 | 5.96 | 5.96 | 5.91 |
| 360.0           | 6.13  | 6.08  | 6.08  | 6.08  | 6.02 | 6.02 | 6.02 | 6.02 | 5.96 |

## Intensity data(cd)

Appendix Page: 18 Total:18

|                 |      |
|-----------------|------|
| C/ $\gamma$ (°) | 90.0 |
| 0.0             | 5.91 |
| 45.0            | 5.91 |
| 90.0            | 5.85 |
| 135.0           | 5.91 |
| 180.0           | 5.91 |
| 225.0           | 5.91 |
| 270.0           | 5.91 |
| 315.0           | 5.91 |
| 360.0           | 5.91 |