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## Nata

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LumCAT: 3-1742-N  
Luminaire: 92.70.045.00+92.70.061.00  
Report No: NATA0100  
Test No: GC2018062107  
LampCAT: NICHIA NFCW108B-V3  
Lamp flux(lm): 2292.0  
Number of Lamps: 1  
Length(mm): 86  
Phm Type: C

Voltage(V): 33.6000  
Current(A): 0.5000  
Power (W): 16.8000  
PF: 0.0000  
Ballast type: DC  
Width(mm): 86  
Height(mm): 0

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## Photometric Results

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Lumens(lm): 1761.95  
Efficiency(%): 76.87%  
Lumens(lm)/Power(W): 104.88  
Central intensity(cd): 6742.757  
Maximum intensity(cd): 6742.757  
Angle of maximum intensity: C=0.0  $\gamma$ =0.0  
Beam Angle(50%Imax): [C0/180]Total=24.1  
                                  [C90/270]Total=24.1  
Field angle(10%Imax): [C0/180]Total=48.5  
                                  [C90/270]Total=48.5  
Beam angle of C0 plane : 24.08  
Aveage BeamAngle(IEC 61341):24.08  
Maximum s/h(1/2): C0\_180=0.41 C90\_270=0.41  
Maximum s/h(1/4): C0\_180=0.42 C90\_270=0.42  
Up flux rate of lamp(%): 0.00%  
Down flux rate of lamp(%): 78.56%  
Up flux rate of LUM(%): - -  
Down flux rate of LUM(%): 100.00%  
CIE Type : Direct lighting  
Output flux ratio in  $\pi$  solid angle : 95.779%

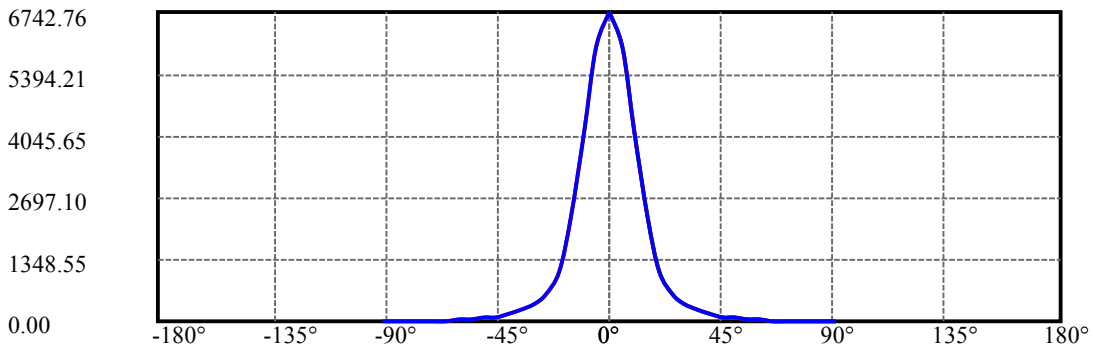
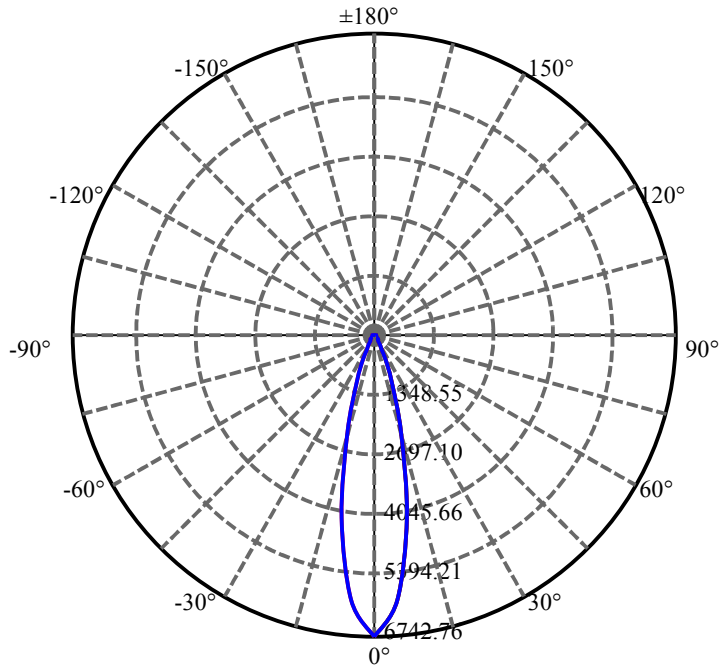
| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 0.0                | 6742.757      | 40.323      | 40.323    | 1.759%      | 2.289%     |
| 5.0                | 5957.860      | 284.627     | 324.95    | 12.418%     | 18.443%    |
| 10.0               | 4137.076      | 393.780     | 718.729   | 17.181%     | 40.792%    |
| 15.0               | 2259.996      | 320.622     | 1039.351  | 13.989%     | 58.989%    |
| 20.0               | 1100.963      | 206.402     | 1245.753  | 9.005%      | 70.703%    |
| 25.0               | 600.913       | 139.203     | 1384.957  | 6.073%      | 78.604%    |
| 30.0               | 384.954       | 105.504     | 1490.46   | 4.603%      | 84.592%    |
| 35.0               | 251.979       | 79.222      | 1569.682  | 3.456%      | 89.088%    |
| 40.0               | 162.788       | 57.356      | 1627.039  | 2.502%      | 92.343%    |
| 45.0               | 103.905       | 40.273      | 1667.311  | 1.757%      | 94.629%    |
| 50.0               | 65.875        | 27.661      | 1694.972  | 1.207%      | 96.199%    |
| 55.0               | 39.537        | 17.753      | 1712.725  | .775%       | 97.206%    |
| 60.0               | 25.016        | 11.875      | 1724.6    | .518%       | 97.880%    |
| 65.0               | 18.382        | 9.132       | 1733.732  | .398%       | 98.399%    |
| 70.0               | 15.801        | 8.139       | 1741.871  | .355%       | 98.860%    |
| 75.0               | 13.454        | 7.124       | 1748.994  | .311%       | 99.265%    |
| 80.0               | 11.252        | 6.074       | 1755.068  | .265%       | 99.609%    |
| 85.0               | 8.892         | 4.855       | 1759.923  | .212%       | 99.885%    |
| 90.0               | 7.391         | 2.026       | 1761.949  | .088%       | 100.000%   |

ZONAL LUMEN SUMMARY

| Zone    | Lumens  | %Lamp  | %Fixt   |
|---------|---------|--------|---------|
| 0-30    | 1490.46 | 65.03% | 84.59%  |
| 0-40    | 1627.04 | 70.99% | 92.34%  |
| 0-60    | 1724.60 | 75.24% | 97.88%  |
| 0-90    | 1759.92 | 76.79% | 99.89%  |
| 0-120   | 1759.92 | 76.79% | 99.89%  |
| 0-180   | 1761.95 | 76.87% | 100.00% |
| 60-90   | 47.20   | 2.06%  | 2.68%   |
| 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%   |
| 0-26.17 | 1409.56 | 61.50% | 80.00%  |

ZONAL LUMEN SUMMARY

|         |        |
|---------|--------|
| 0-10    | 718.73 |
| 10-20   | 527.02 |
| 20-30   | 244.71 |
| 30-40   | 136.58 |
| 40-50   | 67.93  |
| 50-60   | 29.63  |
| 60-70   | 17.27  |
| 70-80   | 13.20  |
| 80-90   | 4.86   |
| 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   |



C0(Max): —————

C0/C180: —————

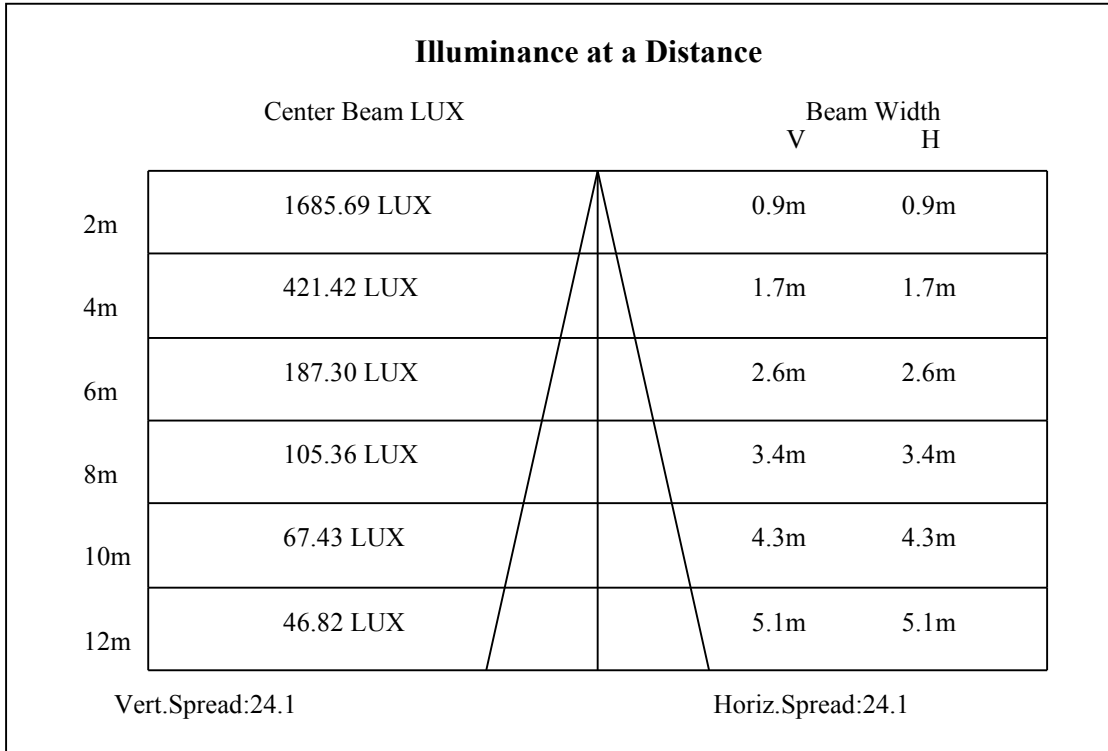
C90/C270: —————

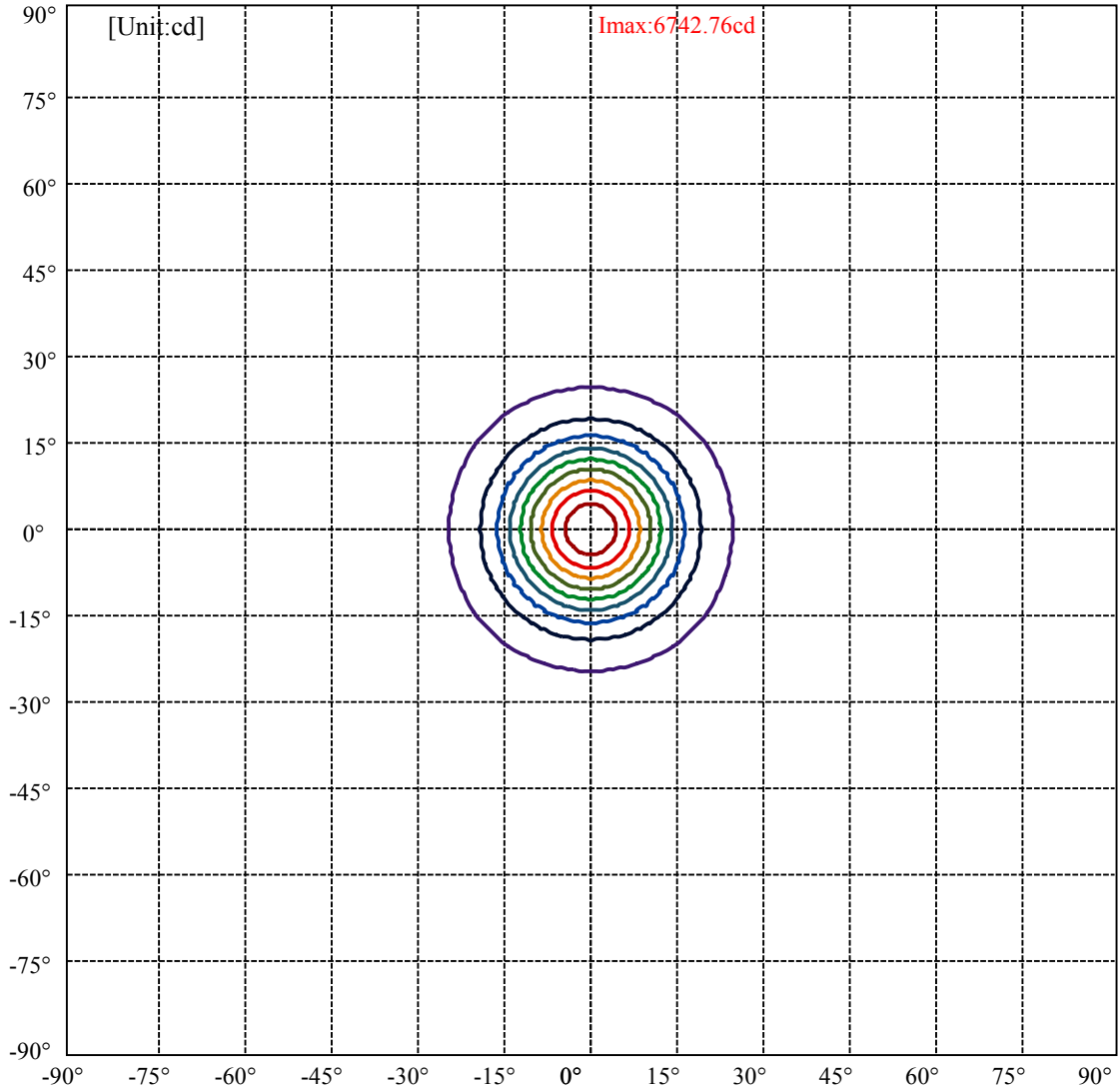
Field angle(10%Imax):C0/180Left:24.3 Right:24.3

:C90/270Left:24.3 Right:24.3

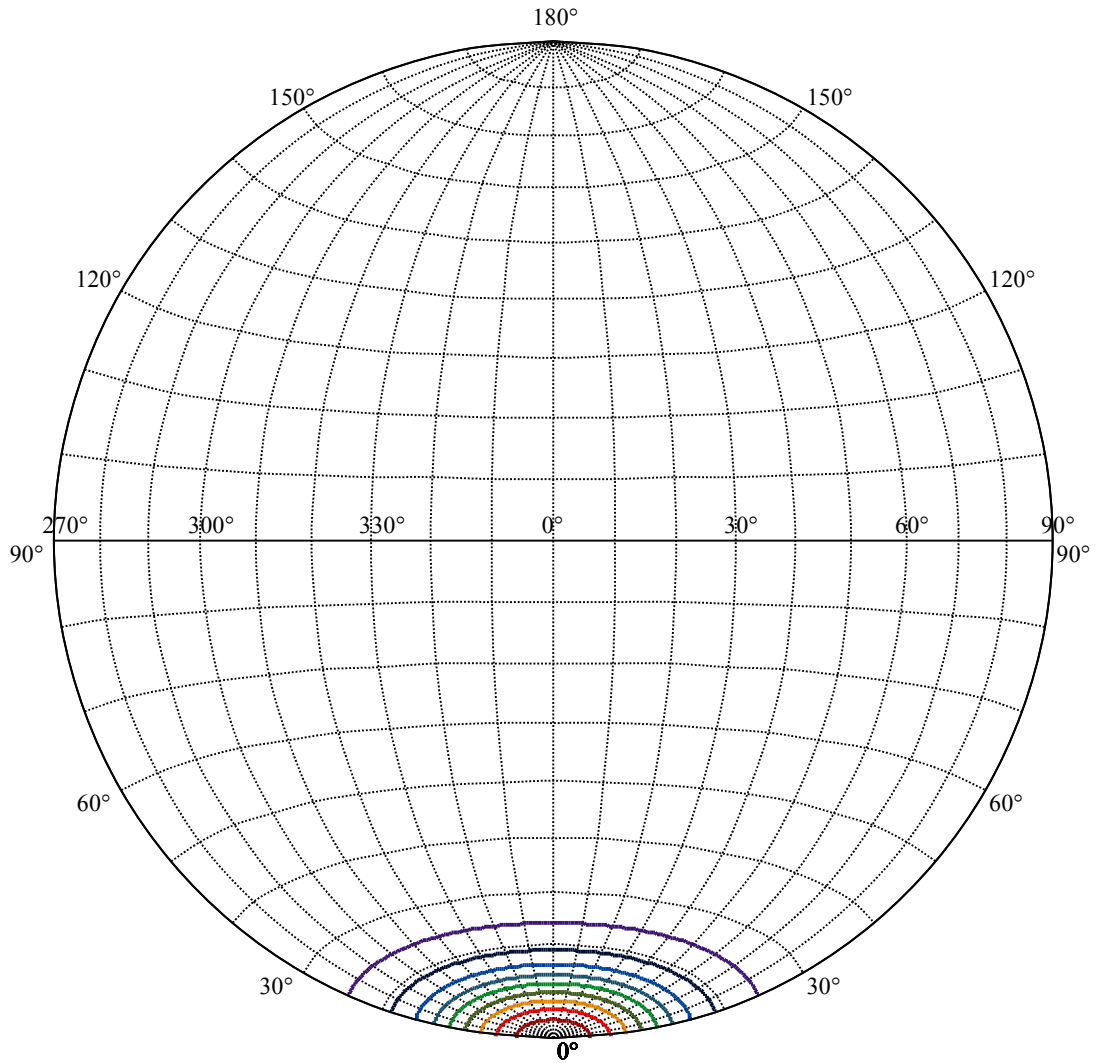
Beam Angle(50%Imax):C0/180Left:12.0 Right:12.0

:C90/270Left:12.0 Right:12.0





|                   |   |
|-------------------|---|
| (10%Imax) 674.276 | — |
| (20%Imax) 1348.55 | — |
| (30%Imax) 2022.83 | — |
| (40%Imax) 2697.1  | — |
| (50%Imax) 3371.38 | — |
| (60%Imax) 4045.65 | — |
| (70%Imax) 4719.93 | — |
| (80%Imax) 5394.21 | — |
| (90%Imax) 6068.48 | — |



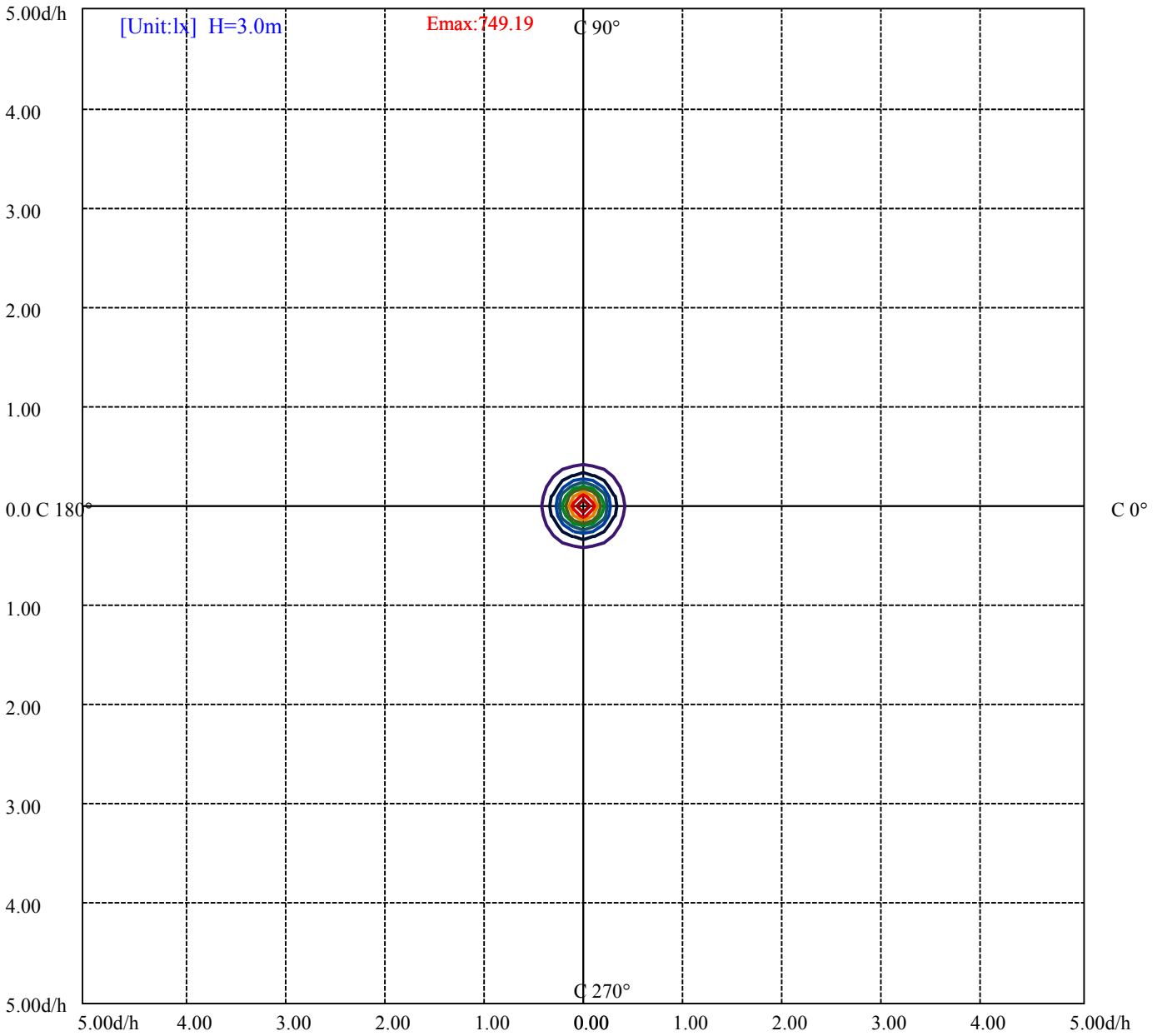
House

[Unit:cd]

Road

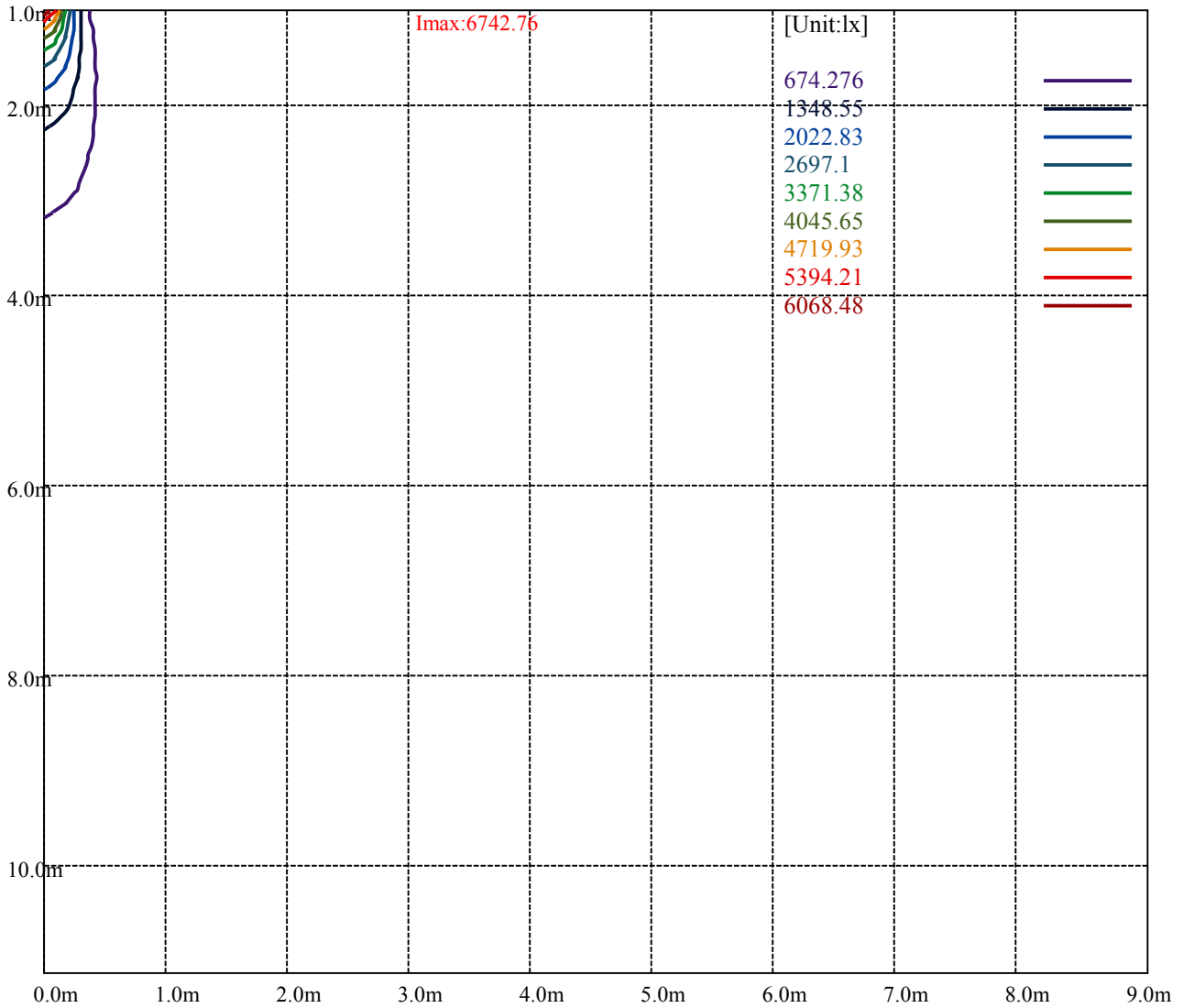
**Imax:6742.76**

|                   |   |
|-------------------|---|
| (10%Imax) 674.276 | — |
| (20%Imax) 1348.55 | — |
| (30%Imax) 2022.83 | — |
| (40%Imax) 2697.1  | — |
| (50%Imax) 3371.38 | — |
| (60%Imax) 4045.65 | — |
| (70%Imax) 4719.93 | — |
| (80%Imax) 5394.21 | — |
| (90%Imax) 6068.48 | — |



|                    |   |
|--------------------|---|
| (10%Emax) 74.91922 | — |
| (20%Emax) 149.8389 | — |
| (30%Emax) 224.7578 | — |
| (40%Emax) 299.6767 | — |
| (50%Emax) 374.5967 | — |
| (60%Emax) 449.5155 | — |
| (70%Emax) 524.4344 | — |
| (80%Emax) 599.3544 | — |
| (90%Emax) 674.2733 | — |





Luminance Table

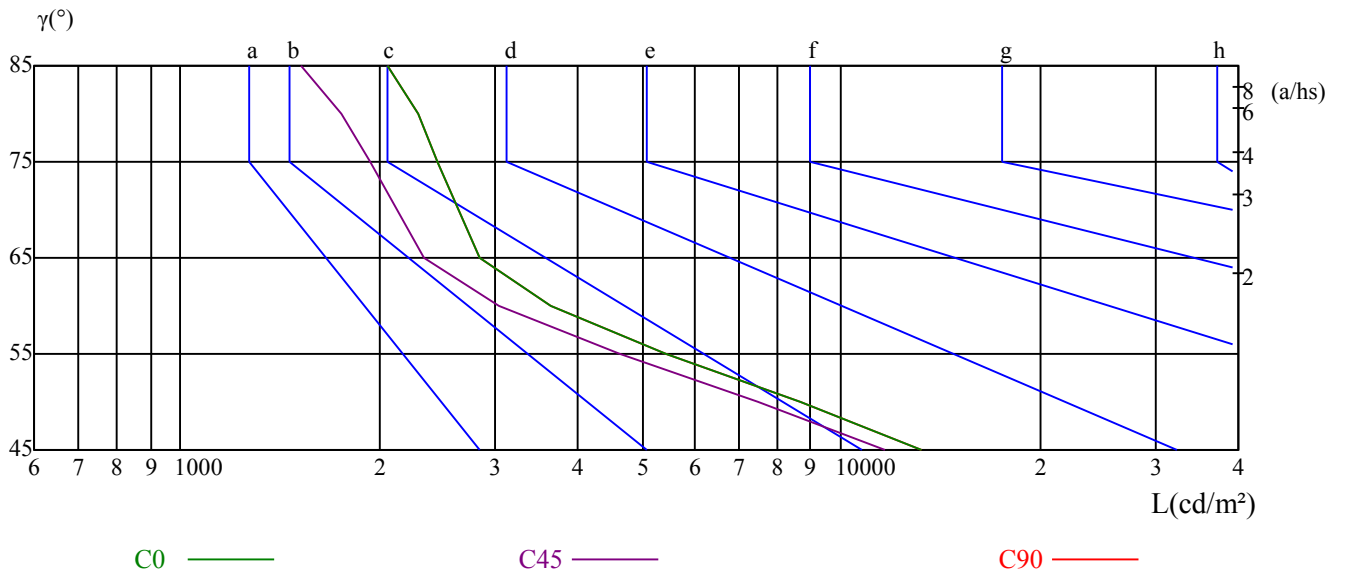
| $\gamma$ | 45    | 50   | 55   | 60   | 65   | 70   | 75   | 80   | 85   |
|----------|-------|------|------|------|------|------|------|------|------|
| C0       | 13245 | 8683 | 5437 | 3625 | 2838 | 2632 | 2452 | 2284 | 2054 |
| C45      | 11638 | 7520 | 4637 | 3041 | 2337 | 2123 | 1931 | 1749 | 1519 |
| C90      | 13245 | 8683 | 5437 | 3625 | 2838 | 2632 | 2452 | 2284 | 2054 |

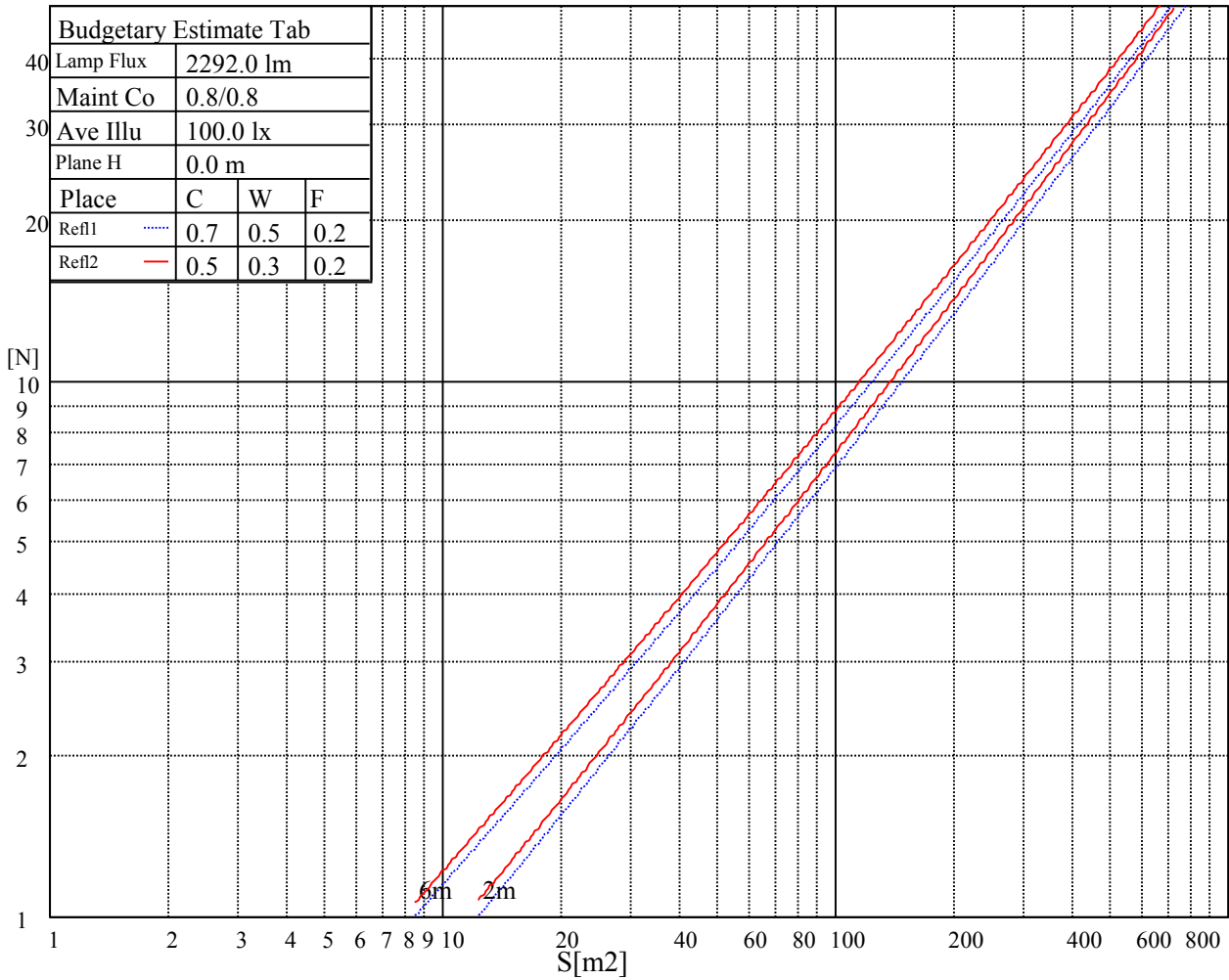
| L(Hor)(65) | L(Ver)(65) | L45(65) | L(Hor)(75) | L(Ver)(75) | L45(75) | L(Hor)(85) | L(Ver)(85) | L45(85) |
|------------|------------|---------|------------|------------|---------|------------|------------|---------|
| 5881       | 5881       | 5881    | 7029       | 7029       | 7029    | 13794      | 13794      | 13794   |

Glare Table

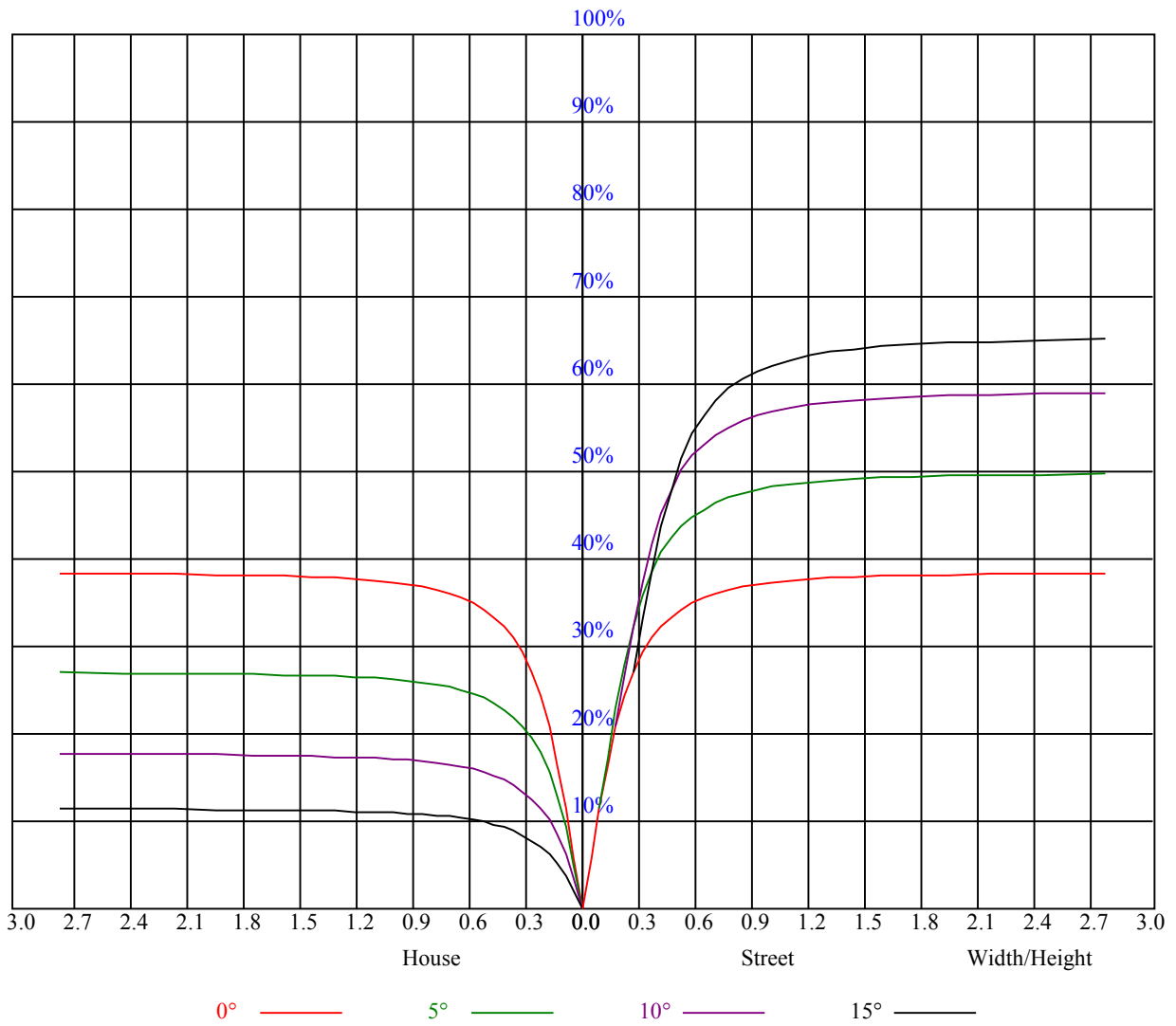
| Glare | Quality | Service Values Illuminance(lx) |      |      |       |       |       |       |       |
|-------|---------|--------------------------------|------|------|-------|-------|-------|-------|-------|
| 1.15  | A       | 2000                           | 1000 | 500  | <=300 |       |    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

Luminance Limiting Curve





| 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   | COEFFICIENTS OF UTILIZATION RHOFC=20 CU |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 0     | 0.94                                    | 0.94 | 0.94 | 0.91 | 0.91 | 0.91 | 0.87 | 0.87 | 0.87 | 0.84 | 0.84 | 0.84 | 0.80 | 0.80 | 0.80 | 0.79 |
| 1     | 0.86                                    | 0.83 | 0.81 | 0.84 | 0.82 | 0.80 | 0.81 | 0.79 | 0.78 | 0.78 | 0.76 | 0.75 | 0.75 | 0.74 | 0.73 | 0.72 |
| 2     | 0.81                                    | 0.78 | 0.75 | 0.80 | 0.77 | 0.74 | 0.77 | 0.75 | 0.73 | 0.75 | 0.73 | 0.71 | 0.73 | 0.71 | 0.70 | 0.68 |
| 3     | 0.77                                    | 0.73 | 0.70 | 0.76 | 0.73 | 0.70 | 0.74 | 0.71 | 0.69 | 0.72 | 0.70 | 0.68 | 0.70 | 0.68 | 0.67 | 0.65 |
| 4     | 0.73                                    | 0.70 | 0.67 | 0.73 | 0.69 | 0.66 | 0.71 | 0.68 | 0.65 | 0.69 | 0.67 | 0.65 | 0.68 | 0.66 | 0.64 | 0.63 |
| 5     | 0.70                                    | 0.66 | 0.64 | 0.70 | 0.66 | 0.63 | 0.68 | 0.65 | 0.63 | 0.67 | 0.64 | 0.62 | 0.66 | 0.64 | 0.62 | 0.61 |
| 6     | 0.68                                    | 0.64 | 0.61 | 0.67 | 0.63 | 0.61 | 0.66 | 0.63 | 0.60 | 0.65 | 0.62 | 0.60 | 0.64 | 0.61 | 0.60 | 0.59 |
| 7     | 0.65                                    | 0.61 | 0.59 | 0.65 | 0.61 | 0.58 | 0.64 | 0.61 | 0.58 | 0.63 | 0.60 | 0.58 | 0.62 | 0.60 | 0.58 | 0.57 |
| 8     | 0.63                                    | 0.59 | 0.57 | 0.63 | 0.59 | 0.57 | 0.62 | 0.59 | 0.56 | 0.61 | 0.58 | 0.56 | 0.60 | 0.58 | 0.56 | 0.55 |
| 9     | 0.61                                    | 0.57 | 0.55 | 0.61 | 0.57 | 0.55 | 0.60 | 0.57 | 0.55 | 0.59 | 0.57 | 0.54 | 0.59 | 0.56 | 0.54 | 0.53 |
| 10    | 0.59                                    | 0.56 | 0.53 | 0.59 | 0.56 | 0.53 | 0.58 | 0.55 | 0.53 | 0.58 | 0.55 | 0.53 | 0.57 | 0.55 | 0.53 | 0.52 |



Intensity data(cd)

|        |         |         |         |         |         |        |        |        |        |
|--------|---------|---------|---------|---------|---------|--------|--------|--------|--------|
| C/γ(°) | 0.0     | 5.0     | 10.0    | 15.0    | 20.0    | 25.0   | 30.0   | 35.0   | 40.0   |
| 0.0    | 6635.95 | 6502.16 | 5140.62 | 3151.98 | 1612.60 | 781.80 | 496.61 | 309.97 | 200.46 |
| 45.0   | 6798.36 | 6118.42 | 4249.25 | 2342.65 | 1173.80 | 635.35 | 406.87 | 279.69 | 172.55 |
| 90.0   | 6762.58 | 5682.92 | 3639.78 | 1904.95 | 906.06  | 520.45 | 342.62 | 221.71 | 149.31 |
| 135.0  | 6776.89 | 5772.66 | 3857.25 | 2012.31 | 941.46  | 537.35 | 346.30 | 220.67 | 146.67 |
| 180.0  | 6635.95 | 5266.14 | 3274.75 | 1561.95 | 765.61  | 477.56 | 303.75 | 194.68 | 131.64 |
| 225.0  | 6792.86 | 5828.27 | 3953.05 | 2049.75 | 1009.57 | 563.56 | 366.95 | 240.27 | 156.75 |
| 270.0  | 6762.58 | 6241.19 | 4517.93 | 2540.30 | 1323.01 | 644.16 | 404.11 | 284.09 | 171.89 |
| 315.0  | 6776.89 | 6251.10 | 4463.97 | 2516.08 | 1075.58 | 647.08 | 412.43 | 264.77 | 173.04 |
| 360.0  | 6635.95 | 6502.16 | 5140.62 | 3151.98 | 1612.60 | 781.80 | 496.61 | 309.97 | 200.46 |
| C/γ(°) | 45.0    | 50.0    | 55.0    | 60.0    | 65.0    | 70.0   | 75.0   | 80.0   | 85.0   |
| 0.0    | 133.68  | 85.83   | 51.42   | 32.43   | 20.32   | 17.18  | 14.65  | 12.61  | 10.08  |
| 45.0   | 110.22  | 70.80   | 41.24   | 25.71   | 18.83   | 16.19  | 13.82  | 11.56  | 9.08   |
| 90.0   | 93.65   | 59.68   | 35.02   | 22.52   | 18.00   | 15.53  | 13.16  | 11.07  | 8.53   |
| 135.0  | 92.11   | 59.13   | 35.18   | 22.35   | 17.89   | 15.36  | 13.16  | 10.96  | 8.31   |
| 180.0  | 82.20   | 51.15   | 30.34   | 20.32   | 16.79   | 14.48  | 12.28  | 9.97   | 7.93   |
| 225.0  | 98.28   | 62.93   | 37.44   | 23.67   | 17.73   | 15.31  | 13.05  | 10.68  | 8.64   |
| 270.0  | 110.39  | 69.76   | 42.83   | 26.59   | 18.66   | 16.19  | 13.76  | 11.62  | 9.19   |
| 315.0  | 110.72  | 67.72   | 42.83   | 26.54   | 18.83   | 16.19  | 13.76  | 11.56  | 9.36   |
| 360.0  | 133.68  | 85.83   | 51.42   | 32.43   | 20.32   | 17.18  | 14.65  | 12.61  | 10.08  |
| C/γ(°) | 90.0    |         |         |         |         |        |        |        |        |
| 0.0    | 7.76    |         |         |         |         |        |        |        |        |
| 45.0   | 7.32    |         |         |         |         |        |        |        |        |
| 90.0   | 7.27    |         |         |         |         |        |        |        |        |
| 135.0  | 7.32    |         |         |         |         |        |        |        |        |
| 180.0  | 7.32    |         |         |         |         |        |        |        |        |
| 225.0  | 7.32    |         |         |         |         |        |        |        |        |
| 270.0  | 7.32    |         |         |         |         |        |        |        |        |
| 315.0  | 7.49    |         |         |         |         |        |        |        |        |
| 360.0  | 7.76    |         |         |         |         |        |        |        |        |