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## Nata

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Client:

LumCAT: 3-1939-M

Luminaire:

Report No:

Voltage(V): 32.8400

Test No: GC2019081901

Current(A): 0.2970

LampCAT: TRIDONIC SLE G7 17MM

Power (W): 9.7500

Lamp flux(lm): 1190.0

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 78

Width(mm): 78

Phm Type: C

Height(mm): 0

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## Photometric Results

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Lumens(lm): 1009.52, Efficiency(%): 84.83% , Luminous Efficacy(lm/W): 103.54

Central intensity(cd): 3364.172, Maximum intensity(cd): 3364.172

Angle of maximum intensity: C=0.0  $\gamma$ =0.0

Beam Angle(50%Imax): [C0/180]Total=27.8

[C90/270]Total=27.8

Field angle(10%Imax): [C0/180]Total=60.8

[C90/270]Total=60.8

Maximum s/h(1/2): C0\_180=0.48 C90\_270=0.48

Maximum s/h(1/4): C0\_180=0.43 C90\_270=0.43

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 84.83%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 98.034%

| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 0.0                | 3364.172      | 0.000       | 0         | .000%       | .000%      |
| 1.0                | 3358.477      | 3.217       | 3.217     | .270%       | .319%      |
| 2.0                | 3338.578      | 9.612       | 12.829    | .808%       | 1.271%     |
| 3.0                | 3307.078      | 15.894      | 28.723    | 1.336%      | 2.845%     |
| 4.0                | 3269.953      | 22.015      | 50.739    | 1.850%      | 5.026%     |
| 5.0                | 3211.172      | 27.881      | 78.62     | 2.343%      | 7.788%     |
| 6.0                | 3138.680      | 33.370      | 111.99    | 2.804%      | 11.093%    |
| 7.0                | 3054.445      | 38.441      | 150.431   | 3.230%      | 14.901%    |
| 8.0                | 2937.234      | 42.881      | 193.312   | 3.603%      | 19.149%    |
| 9.0                | 2789.508      | 46.412      | 239.724   | 3.900%      | 23.746%    |
| 10.0               | 2604.867      | 48.817      | 288.541   | 4.102%      | 28.582%    |
| 11.0               | 2391.891      | 49.928      | 338.469   | 4.196%      | 33.528%    |
| 12.0               | 2164.852      | 49.812      | 388.281   | 4.186%      | 38.462%    |
| 13.0               | 1926.703      | 48.556      | 436.837   | 4.080%      | 43.272%    |
| 14.0               | 1662.961      | 45.947      | 482.785   | 3.861%      | 47.823%    |
| 15.0               | 1409.829      | 42.185      | 524.969   | 3.545%      | 52.002%    |
| 16.0               | 1171.174      | 37.819      | 562.788   | 3.178%      | 55.748%    |
| 17.0               | 971.873       | 33.373      | 596.161   | 2.804%      | 59.054%    |
| 18.0               | 804.319       | 29.286      | 625.447   | 2.461%      | 61.955%    |
| 19.0               | 685.280       | 25.916      | 651.363   | 2.178%      | 64.522%    |
| 20.0               | 587.510       | 23.296      | 674.658   | 1.958%      | 66.830%    |
| 21.0               | 529.861       | 21.456      | 696.114   | 1.803%      | 68.955%    |
| 22.0               | 493.798       | 20.571      | 716.685   | 1.729%      | 70.993%    |
| 23.0               | 466.910       | 20.158      | 736.843   | 1.694%      | 72.989%    |
| 24.0               | 446.688       | 19.975      | 756.818   | 1.679%      | 74.968%    |
| 25.0               | 430.755       | 19.951      | 776.769   | 1.677%      | 76.944%    |
| 26.0               | 416.686       | 20.004      | 796.773   | 1.681%      | 78.926%    |
| 27.0               | 403.720       | 20.071      | 816.844   | 1.687%      | 80.914%    |
| 28.0               | 392.182       | 20.151      | 836.995   | 1.693%      | 82.910%    |
| 29.0               | 374.400       | 20.056      | 857.051   | 1.685%      | 84.897%    |
| 30.0               | 348.040       | 19.506      | 876.557   | 1.639%      | 86.829%    |
| 31.0               | 314.852       | 18.447      | 895.004   | 1.550%      | 88.656%    |
| 32.0               | 279.485       | 17.027      | 912.031   | 1.431%      | 90.343%    |
| 33.0               | 237.572       | 15.233      | 927.264   | 1.280%      | 91.852%    |
| 34.0               | 196.833       | 13.146      | 940.41    | 1.105%      | 93.154%    |
| 35.0               | 154.371       | 10.907      | 951.317   | .917%       | 94.234%    |
| 36.0               | 116.184       | 8.615       | 959.932   | .724%       | 95.088%    |
| 37.0               | 83.334        | 6.507       | 966.439   | .547%       | 95.732%    |

| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 38.0               | 49.099        | 4.420       | 970.859   | .371%       | 96.170%    |
| 39.0               | 26.972        | 2.597       | 973.456   | .218%       | 96.427%    |
| 40.0               | 17.002        | 1.534       | 974.99    | .129%       | 96.579%    |
| 41.0               | 14.428        | 1.119       | 976.109   | .094%       | 96.690%    |
| 42.0               | 13.085        | 1.000       | 977.108   | .084%       | 96.789%    |
| 43.0               | 12.192        | 0.936       | 978.045   | .079%       | 96.882%    |
| 44.0               | 11.370        | 0.889       | 978.934   | .075%       | 96.970%    |
| 45.0               | 10.533        | 0.842       | 979.776   | .071%       | 97.053%    |
| 46.0               | 9.738         | 0.793       | 980.568   | .067%       | 97.132%    |
| 47.0               | 9.077         | 0.748       | 981.317   | .063%       | 97.206%    |
| 48.0               | 8.613         | 0.715       | 982.032   | .060%       | 97.277%    |
| 49.0               | 8.290         | 0.694       | 982.726   | .058%       | 97.346%    |
| 50.0               | 8.016         | 0.680       | 983.406   | .057%       | 97.413%    |
| 51.0               | 7.770         | 0.668       | 984.074   | .056%       | 97.479%    |
| 52.0               | 7.566         | 0.658       | 984.732   | .055%       | 97.544%    |
| 53.0               | 7.348         | 0.649       | 985.381   | .055%       | 97.609%    |
| 54.0               | 7.137         | 0.638       | 986.019   | .054%       | 97.672%    |
| 55.0               | 6.968         | 0.630       | 986.649   | .053%       | 97.734%    |
| 56.0               | 6.799         | 0.622       | 987.271   | .052%       | 97.796%    |
| 57.0               | 6.616         | 0.613       | 987.884   | .052%       | 97.857%    |
| 58.0               | 6.462         | 0.605       | 988.489   | .051%       | 97.917%    |
| 59.0               | 6.321         | 0.598       | 989.086   | .050%       | 97.976%    |
| 60.0               | 6.166         | 0.590       | 989.676   | .050%       | 98.034%    |
| 61.0               | 6.047         | 0.583       | 990.259   | .049%       | 98.092%    |
| 62.0               | 5.941         | 0.578       | 990.837   | .049%       | 98.149%    |
| 63.0               | 5.857         | 0.574       | 991.411   | .048%       | 98.206%    |
| 64.0               | 5.808         | 0.572       | 991.983   | .048%       | 98.263%    |
| 65.0               | 5.963         | 0.583       | 992.566   | .049%       | 98.320%    |
| 66.0               | 6.427         | 0.618       | 993.184   | .052%       | 98.382%    |
| 67.0               | 7.052         | 0.678       | 993.861   | .057%       | 98.449%    |
| 68.0               | 7.770         | 0.751       | 994.612   | .063%       | 98.523%    |
| 69.0               | 8.213         | 0.815       | 995.428   | .069%       | 98.604%    |
| 70.0               | 8.332         | 0.850       | 996.277   | .071%       | 98.688%    |
| 71.0               | 8.325         | 0.861       | 997.138   | .072%       | 98.773%    |
| 72.0               | 8.297         | 0.864       | 998.003   | .073%       | 98.859%    |
| 73.0               | 8.198         | 0.863       | 998.865   | .072%       | 98.944%    |
| 74.0               | 8.044         | 0.854       | 999.719   | .072%       | 99.029%    |
| 75.0               | 7.896         | 0.842       | 1000.561  | .071%       | 99.112%    |

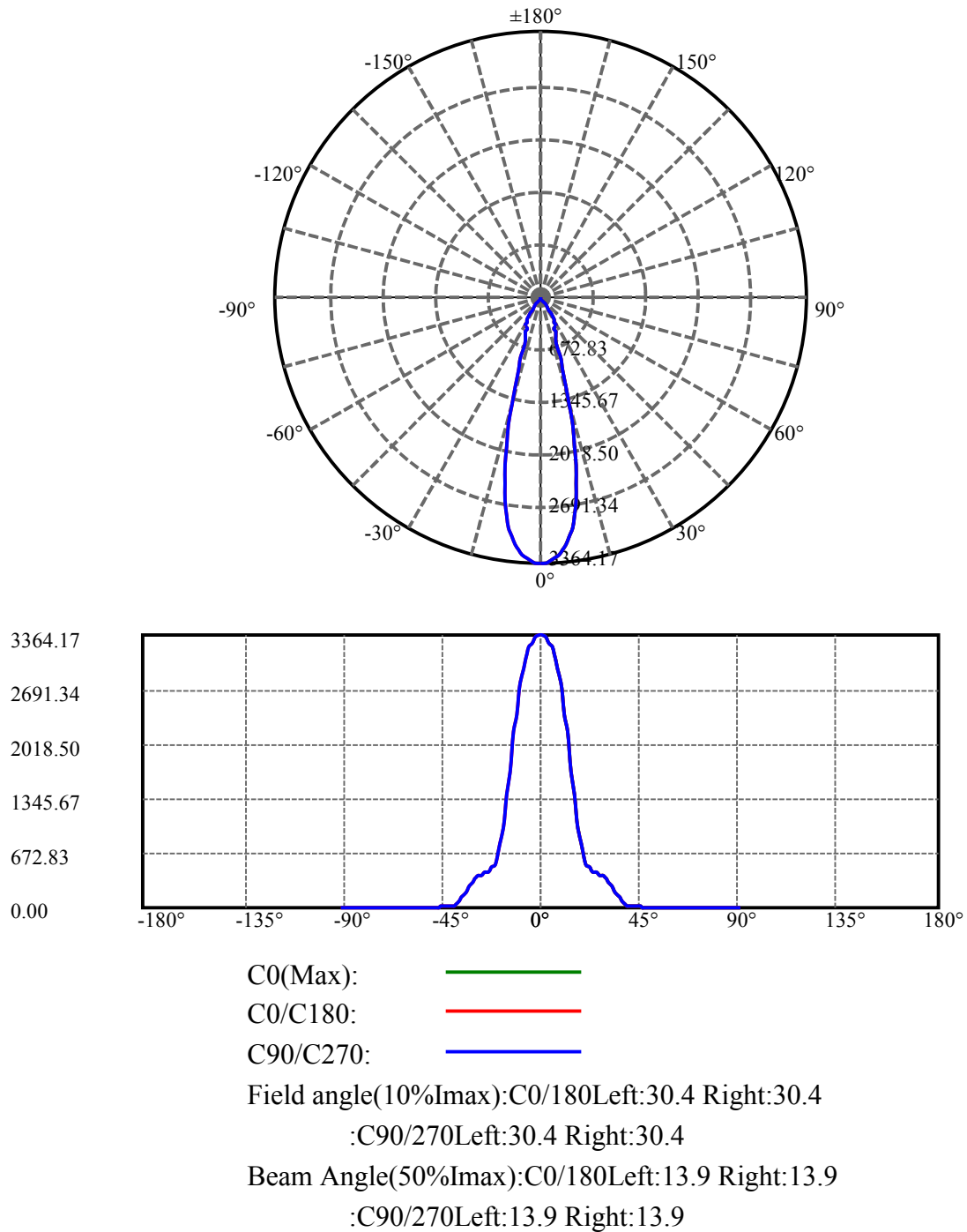
| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 76.0               | 7.713         | 0.829       | 1001.39   | .070%       | 99.195%    |
| 77.0               | 7.305         | 0.801       | 1002.191  | .067%       | 99.274%    |
| 78.0               | 6.363         | 0.732       | 1002.922  | .061%       | 99.346%    |
| 79.0               | 5.534         | 0.639       | 1003.561  | .054%       | 99.410%    |
| 80.0               | 5.245         | 0.581       | 1004.143  | .049%       | 99.467%    |
| 81.0               | 5.119         | 0.560       | 1004.703  | .047%       | 99.523%    |
| 82.0               | 5.048         | 0.551       | 1005.254  | .046%       | 99.577%    |
| 83.0               | 5.041         | 0.548       | 1005.803  | .046%       | 99.632%    |
| 84.0               | 5.041         | 0.549       | 1006.352  | .046%       | 99.686%    |
| 85.0               | 5.006         | 0.548       | 1006.901  | .046%       | 99.740%    |
| 86.0               | 4.950         | 0.544       | 1007.445  | .046%       | 99.794%    |
| 87.0               | 4.873         | 0.538       | 1007.982  | .045%       | 99.848%    |
| 88.0               | 4.725         | 0.526       | 1008.508  | .044%       | 99.900%    |
| 89.0               | 4.641         | 0.513       | 1009.021  | .043%       | 99.950%    |
| 90.0               | 4.479         | 0.500       | 1009.521  | .042%       | 100.000%   |

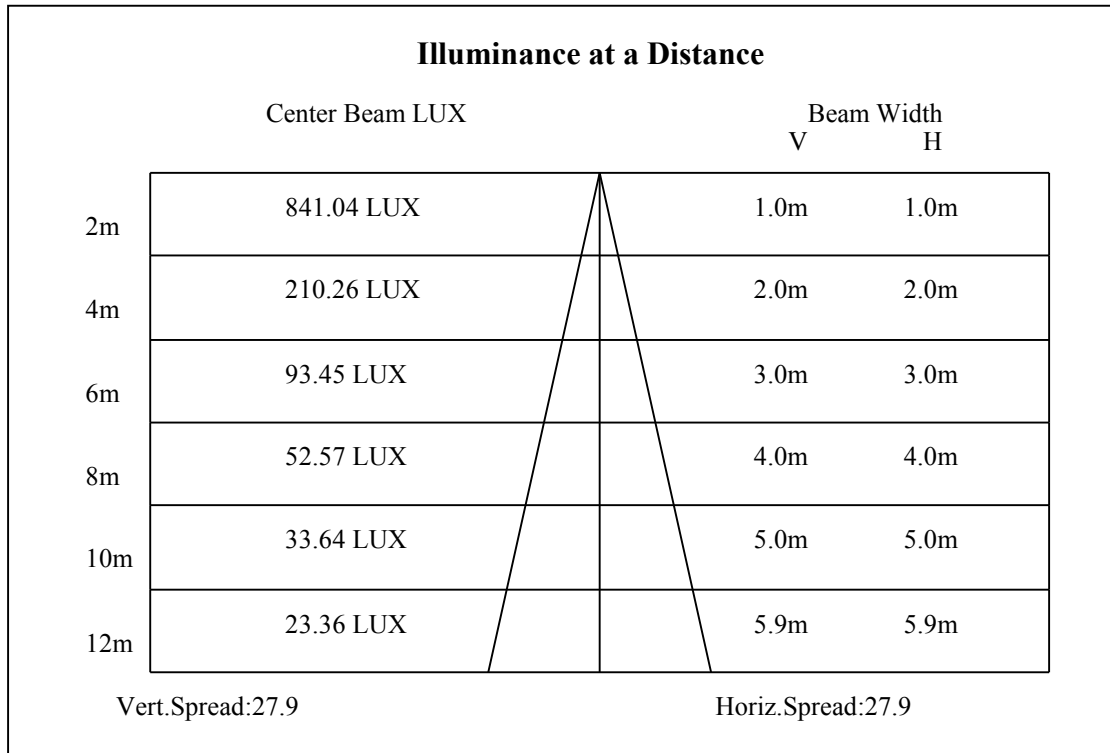
## ZONAL LUMEN SUMMARY

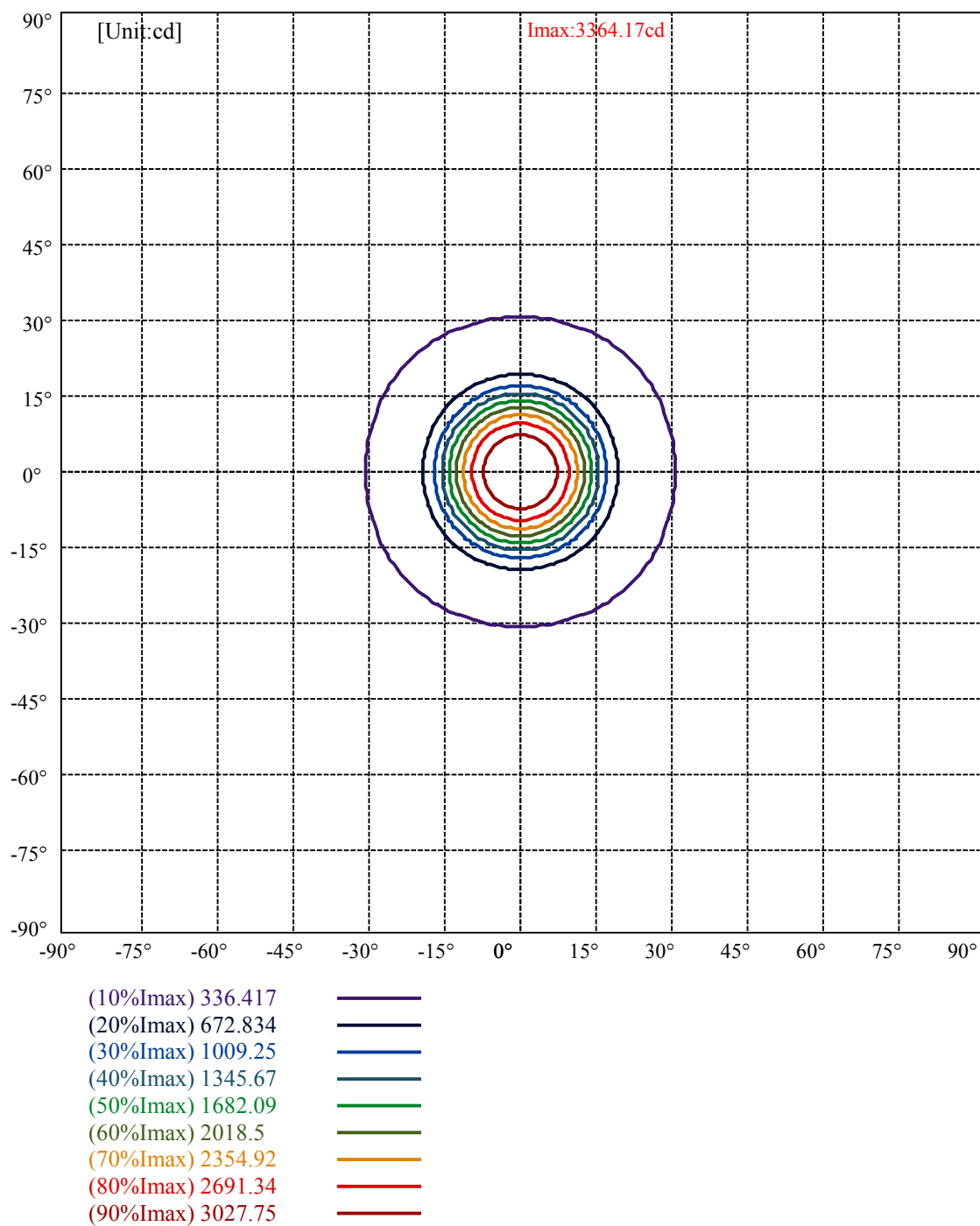
| Zone    | Lumens  | %Lamp  | %Fixt   |
|---------|---------|--------|---------|
| 0-30    | 876.56  | 73.66% | 86.83%  |
| 0-40    | 974.99  | 81.93% | 96.58%  |
| 0-60    | 989.68  | 83.17% | 98.03%  |
| 0-90    | 1009.02 | 84.79% | 99.95%  |
| 0-120   | 1009.02 | 84.79% | 99.95%  |
| 0-180   | 1009.52 | 84.83% | 100.00% |
| 60-90   | 19.94   | 1.68%  | 1.97%   |
| 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%   |
| 0-26.54 | 807.62  | 67.87% | 80.00%  |

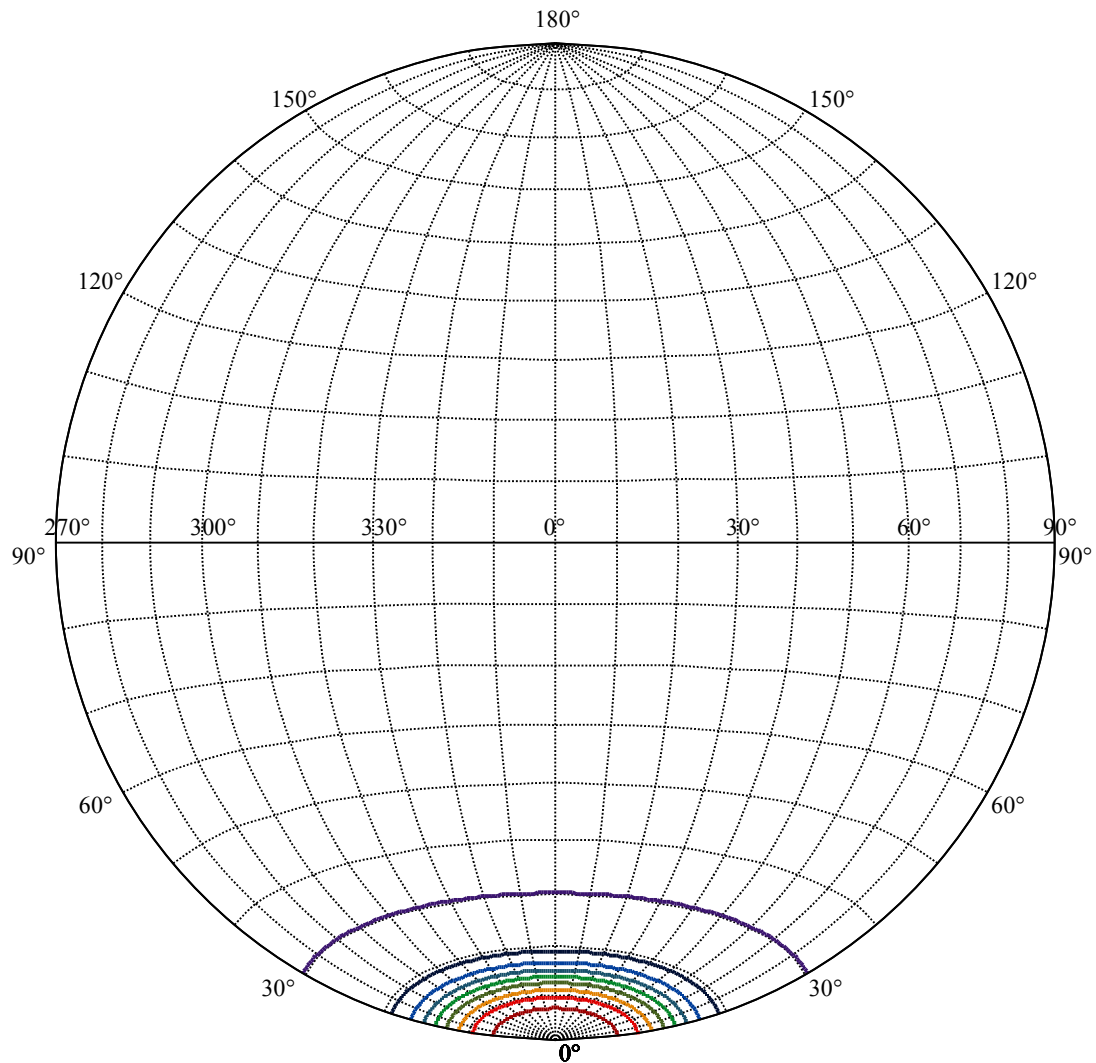
## ZONAL LUMEN SUMMARY

|         |        |
|---------|--------|
| 0-10    | 288.54 |
| 10-20   | 386.12 |
| 20-30   | 201.90 |
| 30-40   | 98.43  |
| 40-50   | 8.42   |
| 50-60   | 6.27   |
| 60-70   | 6.60   |
| 70-80   | 7.87   |
| 80-90   | 4.88   |
| 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:3364.17

(10%Imax) 336.417

(20%Imax) 672.834

(30%Imax) 1009.25

(40%Imax) 1345.67

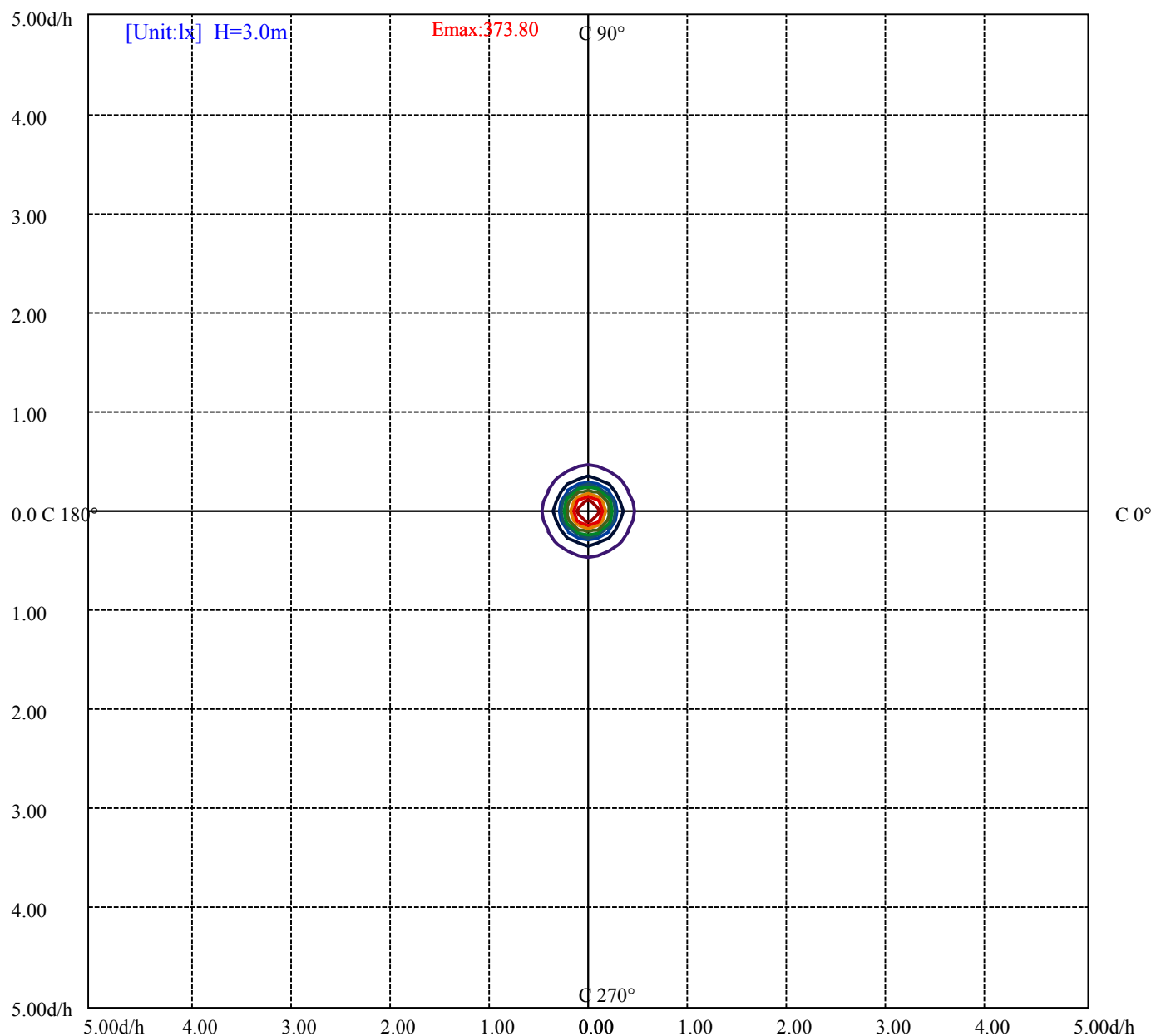
(50%Imax) 1682.09

(60%Imax) 2018.5

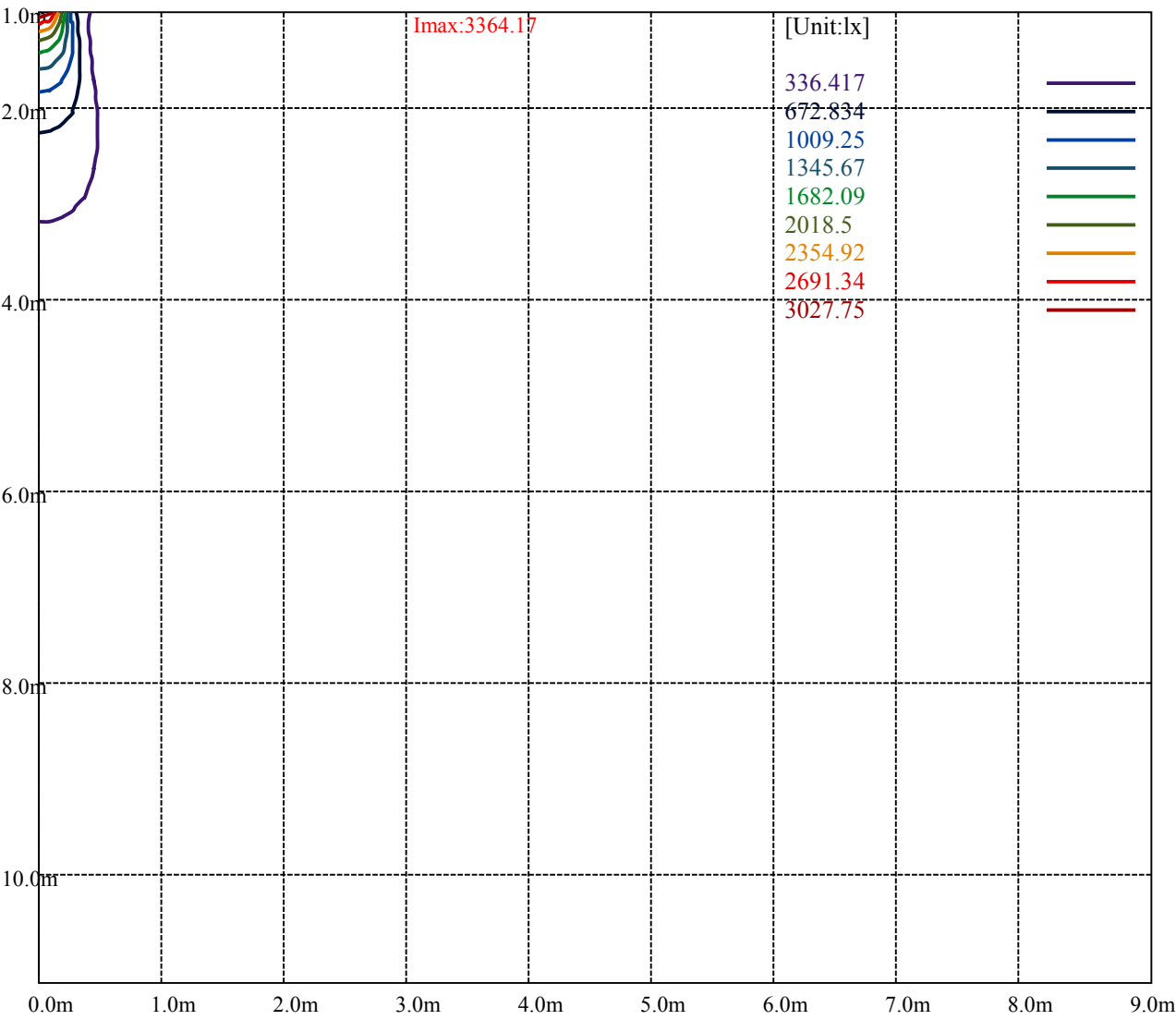
(70%Imax) 2354.92

(80%Imax) 2691.34

(90%Imax) 3027.75



|           |          |   |
|-----------|----------|---|
| (10%Emax) | 37.37967 | — |
| (20%Emax) | 74.75933 | — |
| (30%Emax) | 112.1389 | — |
| (40%Emax) | 149.5189 | — |
| (50%Emax) | 186.8989 | — |
| (60%Emax) | 224.2778 | — |
| (70%Emax) | 261.6578 | — |
| (80%Emax) | 299.0378 | — |
| (90%Emax) | 336.4167 | — |



Luminance Table

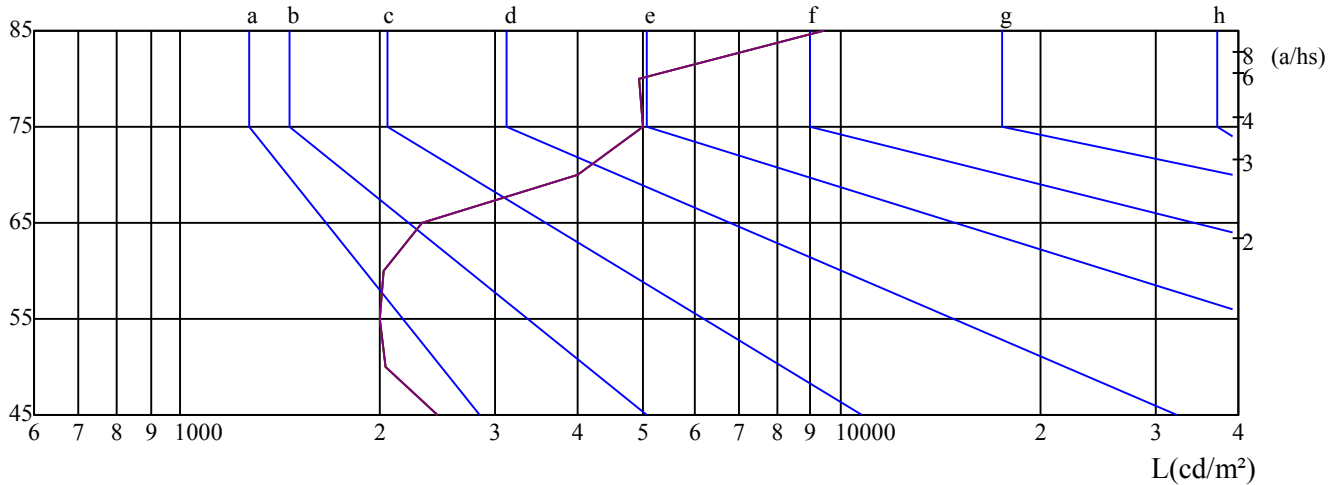
| $\gamma$ | 45   | 50   | 55   | 60   | 65   | 70   | 75   | 80   | 85   |
|----------|------|------|------|------|------|------|------|------|------|
| C0       | 2448 | 2050 | 1997 | 2027 | 2319 | 4004 | 5014 | 4965 | 9441 |
| C45      | 2448 | 2050 | 1997 | 2027 | 2319 | 4004 | 5014 | 4965 | 9441 |
| C90      | 2448 | 2050 | 1997 | 2027 | 2319 | 4004 | 5014 | 4965 | 9441 |

| L(Hor)(65) | L(Ver)(65) | L45(65) | L(Hor)(75) | L(Ver)(75) | L45(75) | L(Hor)(85) | L(Ver)(85) | L45(85) |
|------------|------------|---------|------------|------------|---------|------------|------------|---------|
| 2319       | 2319       | 2319    | 5014       | 5014       | 5014    | 9441       | 9441       | 9441    |

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          |

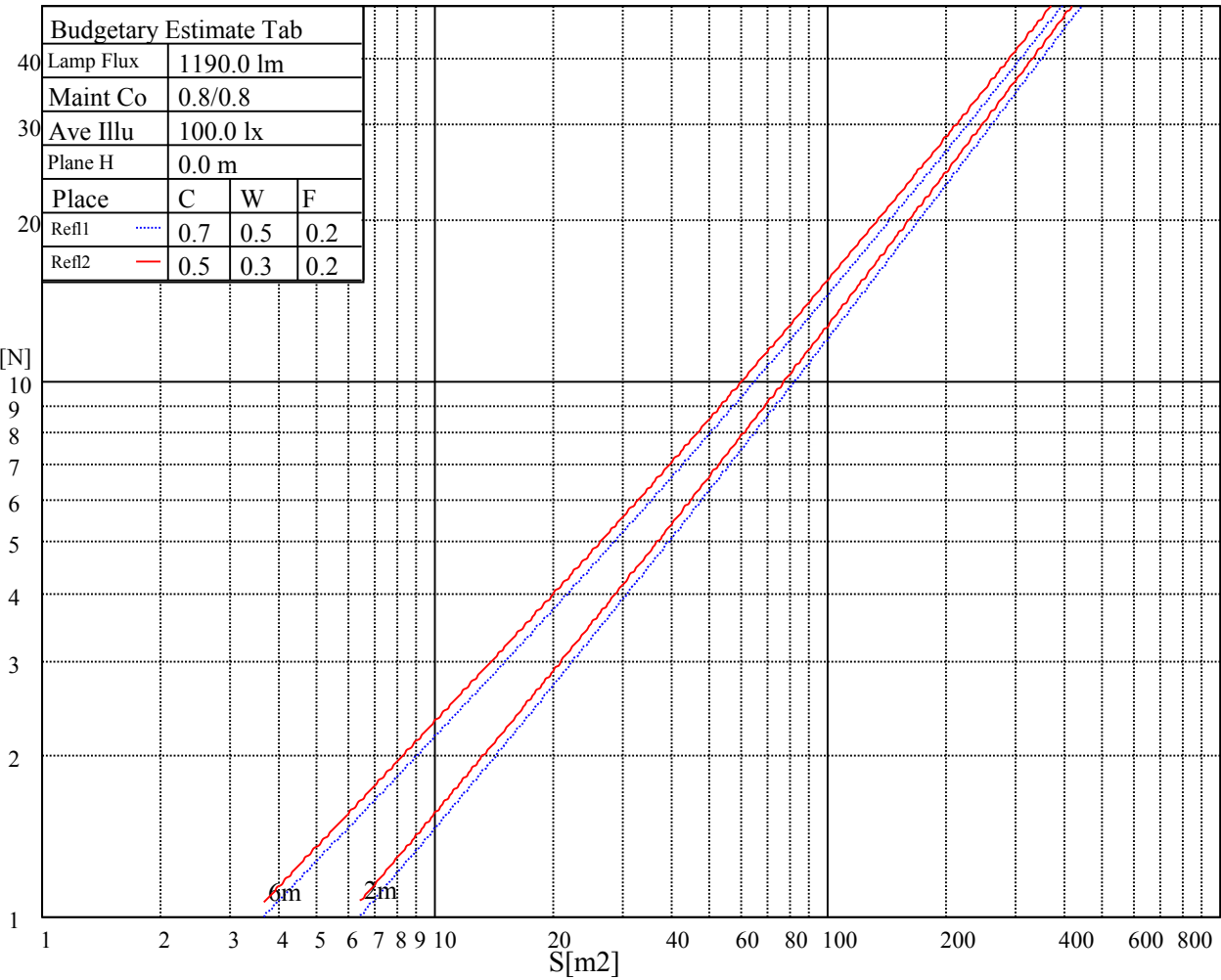
Luminance Limiting Curve

 $\gamma(^{\circ})$ 

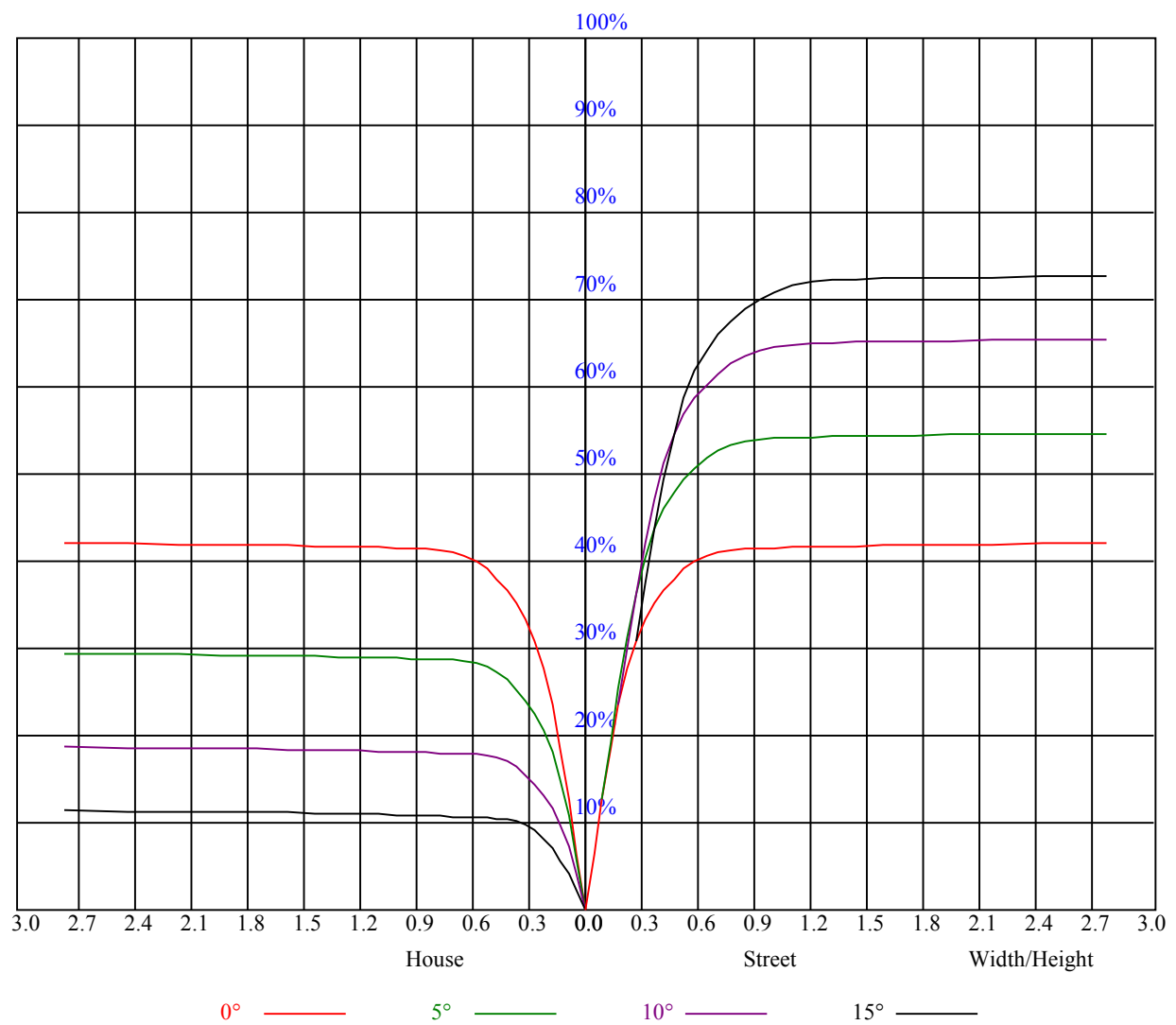
C0 ———

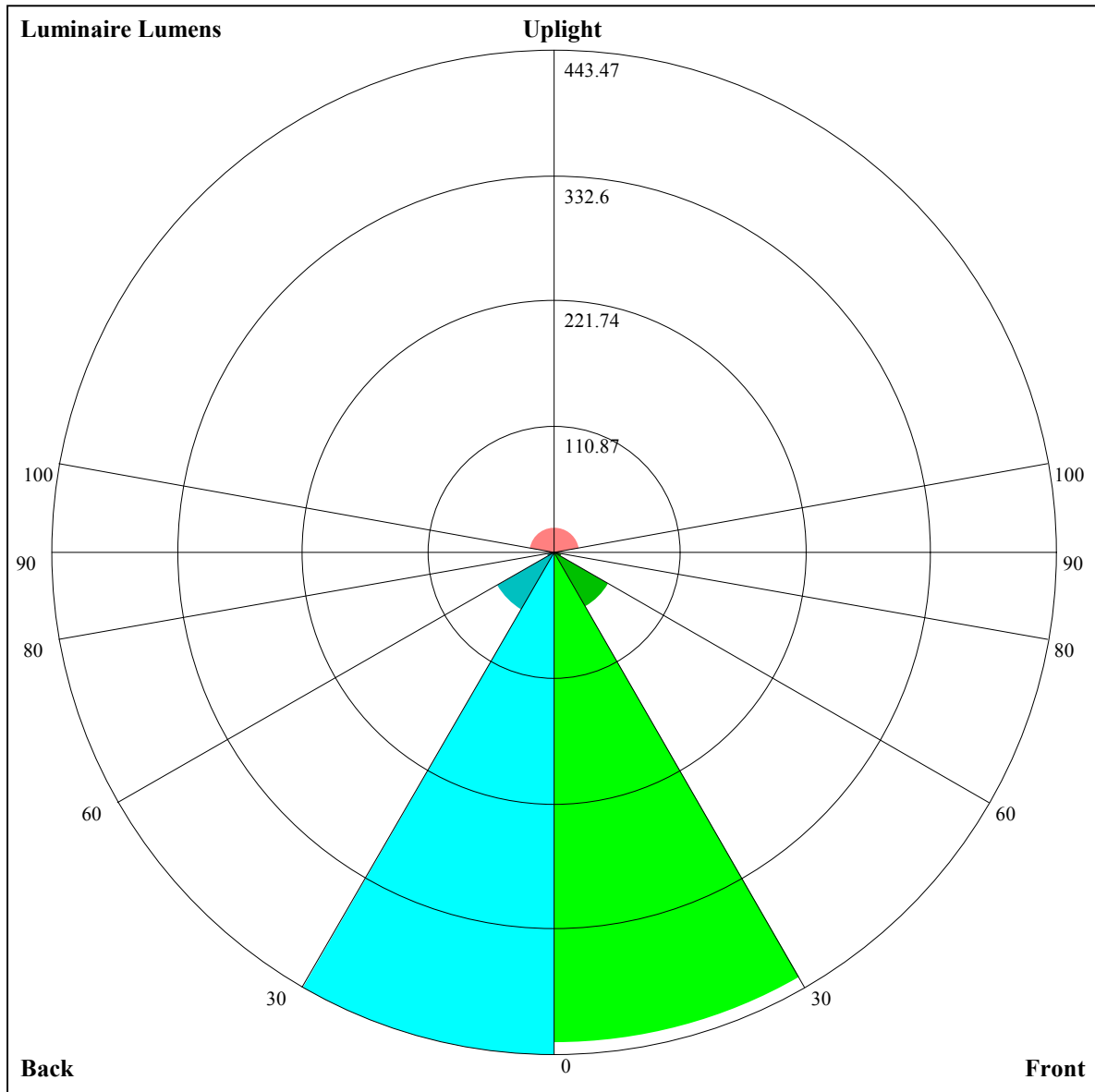
C45 ———

C90 ———



| 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     | 1.01                                    | 1.01 | 1.01 | 0.99 | 0.99 | 0.99 | 0.94 | 0.94 | 0.94 | 0.90 | 0.90 | 0.90 | 0.87 | 0.87 | 0.87 | 0.85 |
| 1     | 0.95                                    | 0.93 | 0.91 | 0.93 | 0.91 | 0.90 | 0.90 | 0.88 | 0.87 | 0.86 | 0.85 | 0.84 | 0.84 | 0.83 | 0.82 | 0.81 |
| 2     | 0.90                                    | 0.87 | 0.84 | 0.88 | 0.86 | 0.83 | 0.85 | 0.83 | 0.81 | 0.83 | 0.81 | 0.80 | 0.81 | 0.79 | 0.78 | 0.77 |
| 3     | 0.85                                    | 0.82 | 0.79 | 0.84 | 0.81 | 0.78 | 0.82 | 0.79 | 0.77 | 0.80 | 0.78 | 0.76 | 0.78 | 0.76 | 0.75 | 0.73 |
| 4     | 0.81                                    | 0.77 | 0.74 | 0.80 | 0.77 | 0.74 | 0.78 | 0.75 | 0.73 | 0.77 | 0.74 | 0.72 | 0.75 | 0.73 | 0.71 | 0.70 |
| 5     | 0.78                                    | 0.74 | 0.71 | 0.77 | 0.73 | 0.70 | 0.75 | 0.72 | 0.70 | 0.74 | 0.71 | 0.69 | 0.73 | 0.70 | 0.69 | 0.67 |
| 6     | 0.74                                    | 0.70 | 0.67 | 0.74 | 0.70 | 0.67 | 0.73 | 0.69 | 0.67 | 0.71 | 0.69 | 0.66 | 0.70 | 0.68 | 0.66 | 0.65 |
| 7     | 0.71                                    | 0.67 | 0.65 | 0.71 | 0.67 | 0.64 | 0.70 | 0.67 | 0.64 | 0.69 | 0.66 | 0.64 | 0.68 | 0.65 | 0.63 | 0.62 |
| 8     | 0.69                                    | 0.65 | 0.62 | 0.68 | 0.65 | 0.62 | 0.67 | 0.64 | 0.62 | 0.67 | 0.64 | 0.61 | 0.66 | 0.63 | 0.61 | 0.60 |
| 9     | 0.66                                    | 0.62 | 0.60 | 0.66 | 0.62 | 0.60 | 0.65 | 0.62 | 0.59 | 0.65 | 0.61 | 0.59 | 0.64 | 0.61 | 0.59 | 0.58 |
| 10    | 0.64                                    | 0.60 | 0.58 | 0.64 | 0.60 | 0.58 | 0.63 | 0.60 | 0.57 | 0.63 | 0.59 | 0.57 | 0.62 | 0.59 | 0.57 | 0.56 |





Luminaire Lumens:

FL=432.6,FM=54.94,FH=6.93,FVH=2.63

BL=443.47,BM=58.98,BH=6.8,BVH=2.7

UL=4.89,UH=23.26

BUG Rating:B1-U2-G0

Nata 3-1939-M

| Intensity data(cd)         |         |         |         |         |         |         |         |         |         |
|----------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Appendix Page: 17 Total:19 |         |         |         |         |         |         |         |         |         |
| C/γ(°)                     | 0.0     | 1.0     | 2.0     | 3.0     | 4.0     | 5.0     | 6.0     | 7.0     | 8.0     |
| 0.0                        | 3365.44 | 3360.38 | 3338.44 | 3310.31 | 3274.88 | 3201.75 | 3125.25 | 3043.13 | 2899.69 |
| 45.0                       | 3371.06 | 3349.69 | 3322.13 | 3277.69 | 3234.38 | 3178.69 | 3082.50 | 2981.25 | 2873.25 |
| 90.0                       | 3355.31 | 3328.31 | 3295.69 | 3250.69 | 3208.50 | 3138.19 | 3043.13 | 2936.81 | 2792.25 |
| 135.0                      | 3364.88 | 3354.19 | 3321.56 | 3293.44 | 3258.56 | 3199.50 | 3138.75 | 3058.88 | 2946.94 |
| 180.0                      | 3365.44 | 3357.56 | 3335.63 | 3306.94 | 3268.13 | 3218.63 | 3160.69 | 3076.88 | 2963.25 |
| 225.0                      | 3371.06 | 3378.94 | 3366.56 | 3341.81 | 3309.19 | 3258.00 | 3195.56 | 3135.38 | 3040.31 |
| 270.0                      | 3355.31 | 3371.63 | 3375.56 | 3357.56 | 3326.06 | 3278.81 | 3217.50 | 3153.94 | 3066.19 |
| 315.0                      | 3364.88 | 3367.13 | 3353.06 | 3318.19 | 3279.94 | 3215.81 | 3146.06 | 3049.31 | 2916.00 |
| 360.0                      | 3365.44 | 3360.38 | 3338.44 | 3310.31 | 3274.88 | 3201.75 | 3125.25 | 3043.13 | 2899.69 |
| C/γ(°)                     | 9.0     | 10.0    | 11.0    | 12.0    | 13.0    | 14.0    | 15.0    | 16.0    | 17.0    |
| 0.0                        | 2739.94 | 2592.56 | 2355.75 | 2118.94 | 1927.13 | 1639.13 | 1409.06 | 1186.88 | 947.25  |
| 45.0                       | 2669.06 | 2491.88 | 2317.50 | 2050.31 | 1798.88 | 1596.94 | 1314.56 | 1109.81 | 929.81  |
| 90.0                       | 2631.94 | 2420.44 | 2188.69 | 1972.13 | 1744.88 | 1457.44 | 1104.13 | 1032.08 | 823.05  |
| 135.0                      | 2797.88 | 2634.19 | 2412.56 | 2199.94 | 1950.19 | 1689.75 | 1455.19 | 1200.94 | 975.94  |
| 180.0                      | 2827.13 | 2633.63 | 2435.06 | 2189.81 | 1963.13 | 1671.19 | 1440.56 | 1112.29 | 990.79  |
| 225.0                      | 2939.06 | 2718.56 | 2518.31 | 2303.44 | 2021.63 | 1788.19 | 1555.31 | 1237.50 | 1050.86 |
| 270.0                      | 2939.63 | 2786.63 | 2574.00 | 2367.56 | 2118.38 | 1858.50 | 1625.63 | 1388.81 | 1118.25 |
| 315.0                      | 2771.44 | 2561.06 | 2333.25 | 2116.69 | 1889.44 | 1602.56 | 1374.19 | 1101.09 | 939.04  |
| 360.0                      | 2739.94 | 2592.56 | 2355.75 | 2118.94 | 1927.13 | 1639.13 | 1409.06 | 1186.88 | 947.25  |
| C/γ(°)                     | 18.0    | 19.0    | 20.0    | 21.0    | 22.0    | 23.0    | 24.0    | 25.0    | 26.0    |
| 0.0                        | 794.81  | 678.38  | 576.56  | 527.06  | 493.31  | 466.31  | 448.31  | 432.00  | 418.50  |
| 45.0                       | 748.69  | 642.38  | 562.50  | 513.56  | 484.31  | 462.38  | 441.00  | 425.25  | 414.00  |
| 90.0                       | 695.42  | 605.64  | 538.48  | 497.76  | 472.39  | 451.07  | 435.21  | 419.34  | 404.83  |
| 135.0                      | 812.25  | 688.50  | 586.13  | 536.63  | 500.63  | 471.38  | 449.44  | 434.81  | 418.50  |
| 180.0                      | 805.56  | 684.56  | 587.93  | 532.58  | 491.91  | 467.94  | 446.34  | 428.96  | 413.66  |
| 225.0                      | 875.19  | 738.68  | 623.14  | 547.09  | 505.24  | 474.41  | 452.25  | 436.89  | 422.27  |
| 270.0                      | 932.63  | 785.81  | 649.13  | 571.50  | 522.00  | 485.44  | 461.25  | 444.94  | 429.19  |
| 315.0                      | 770.01  | 658.29  | 576.23  | 512.72  | 480.60  | 456.36  | 439.71  | 423.84  | 412.54  |
| 360.0                      | 794.81  | 678.38  | 576.56  | 527.06  | 493.31  | 466.31  | 448.31  | 432.00  | 418.50  |
| C/γ(°)                     | 27.0    | 28.0    | 29.0    | 30.0    | 31.0    | 32.0    | 33.0    | 34.0    | 35.0    |
| 0.0                        | 404.44  | 393.75  | 373.50  | 344.81  | 307.69  | 286.31  | 227.36  | 184.67  | 142.71  |
| 45.0                       | 397.69  | 384.75  | 363.38  | 327.38  | 287.44  | 263.19  | 207.00  | 168.81  | 128.59  |
| 90.0                       | 394.09  | 381.99  | 351.90  | 320.40  | 285.08  | 239.23  | 201.66  | 164.36  | 120.15  |
| 135.0                      | 405.56  | 396.00  | 380.25  | 356.06  | 321.19  | 286.88  | 244.13  | 202.22  | 160.48  |
| 180.0                      | 401.96  | 390.43  | 377.78  | 353.03  | 323.10  | 285.02  | 244.86  | 207.56  | 169.93  |
| 225.0                      | 409.84  | 396.79  | 386.10  | 367.93  | 340.71  | 298.46  | 261.56  | 224.21  | 176.01  |
| 270.0                      | 416.25  | 403.88  | 390.38  | 373.50  | 344.25  | 307.13  | 285.75  | 232.76  | 185.23  |
| 315.0                      | 399.94  | 389.87  | 371.93  | 341.21  | 309.38  | 269.66  | 228.26  | 190.07  | 151.88  |
| 360.0                      | 404.44  | 393.75  | 373.50  | 344.81  | 307.69  | 286.31  | 227.36  | 184.67  | 142.71  |
| C/γ(°)                     | 36.0    | 37.0    | 38.0    | 39.0    | 40.0    | 41.0    | 42.0    | 43.0    | 44.0    |
| 0.0                        | 107.38  | 74.14   | 39.21   | 21.04   | 16.03   | 14.06   | 13.05   | 12.21   | 11.36   |
| 45.0                       | 90.06   | 60.13   | 31.39   | 17.38   | 15.13   | 13.89   | 12.88   | 12.09   | 11.42   |
| 90.0                       | 87.58   | 57.99   | 28.58   | 16.43   | 14.46   | 12.94   | 12.15   | 11.14   | 10.18   |
| 135.0                      | 125.04  | 91.74   | 54.23   | 30.60   | 16.59   | 14.40   | 12.94   | 12.15   | 11.48   |
| 180.0                      | 125.04  | 92.03   | 61.03   | 30.32   | 16.59   | 14.40   | 12.88   | 11.98   | 11.14   |
| 225.0                      | 139.50  | 104.91  | 63.06   | 35.66   | 19.18   | 15.47   | 13.84   | 12.77   | 11.76   |
| 270.0                      | 147.49  | 111.09  | 69.24   | 41.34   | 22.22   | 16.48   | 14.06   | 13.16   | 12.26   |
| 315.0                      | 107.38  | 74.64   | 46.07   | 23.01   | 15.81   | 13.78   | 12.88   | 12.04   | 11.36   |
| 360.0                      | 107.38  | 74.14   | 39.21   | 21.04   | 16.03   | 14.06   | 13.05   | 12.21   | 11.36   |

## 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             | 10.46 | 9.73  | 9.28  | 9.00  | 8.72  | 8.44  | 8.16  | 7.99  | 7.76  |
| 45.0            | 10.63 | 9.79  | 9.34  | 8.66  | 8.38  | 8.16  | 7.88  | 7.71  | 7.48  |
| 90.0            | 9.51  | 8.78  | 8.33  | 8.10  | 7.88  | 7.54  | 7.37  | 7.14  | 6.98  |
| 135.0           | 10.58 | 9.79  | 8.94  | 8.44  | 8.16  | 7.93  | 7.65  | 7.43  | 7.20  |
| 180.0           | 10.41 | 9.79  | 9.06  | 8.55  | 8.33  | 8.04  | 7.82  | 7.59  | 7.43  |
| 225.0           | 10.91 | 10.01 | 9.17  | 8.72  | 8.44  | 8.16  | 7.93  | 7.65  | 7.43  |
| 270.0           | 11.31 | 10.46 | 9.73  | 9.06  | 8.27  | 7.99  | 7.71  | 7.54  | 7.26  |
| 315.0           | 10.46 | 9.56  | 8.78  | 8.38  | 8.16  | 7.88  | 7.65  | 7.48  | 7.26  |
| 360.0           | 10.46 | 9.73  | 9.28  | 9.00  | 8.72  | 8.44  | 8.16  | 7.99  | 7.76  |
| C/ $\gamma$ (°) | 54.0  | 55.0  | 56.0  | 57.0  | 58.0  | 59.0  | 60.0  | 61.0  | 62.0  |
| 0.0             | 7.54  | 7.31  | 7.09  | 6.86  | 6.69  | 6.53  | 6.30  | 6.19  | 6.08  |
| 45.0            | 7.26  | 7.09  | 6.92  | 6.69  | 6.58  | 6.36  | 6.19  | 6.08  | 5.96  |
| 90.0            | 6.75  | 6.58  | 6.41  | 6.30  | 6.13  | 6.02  | 5.91  | 5.79  | 5.68  |
| 135.0           | 7.03  | 6.86  | 6.69  | 6.53  | 6.36  | 6.30  | 6.13  | 6.08  | 5.96  |
| 180.0           | 7.20  | 7.09  | 6.98  | 6.81  | 6.58  | 6.41  | 6.30  | 6.13  | 6.08  |
| 225.0           | 7.26  | 7.09  | 6.86  | 6.75  | 6.58  | 6.41  | 6.30  | 6.13  | 5.96  |
| 270.0           | 7.03  | 6.86  | 6.75  | 6.47  | 6.36  | 6.24  | 6.08  | 5.96  | 5.85  |
| 315.0           | 7.03  | 6.86  | 6.69  | 6.53  | 6.41  | 6.30  | 6.13  | 6.02  | 5.96  |
| 360.0           | 7.54  | 7.31  | 7.09  | 6.86  | 6.69  | 6.53  | 6.30  | 6.19  | 6.08  |
| C/ $\gamma$ (°) | 63.0  | 64.0  | 65.0  | 66.0  | 67.0  | 68.0  | 69.0  | 70.0  | 71.0  |
| 0.0             | 6.02  | 6.19  | 7.71  | 10.29 | 13.11 | 15.69 | 16.82 | 16.88 | 16.43 |
| 45.0            | 5.85  | 5.79  | 5.68  | 5.68  | 6.08  | 6.69  | 7.03  | 7.20  | 7.20  |
| 90.0            | 5.63  | 5.57  | 5.46  | 5.40  | 5.34  | 5.29  | 5.23  | 5.18  | 5.12  |
| 135.0           | 5.91  | 5.79  | 5.74  | 5.68  | 5.63  | 5.57  | 5.51  | 5.51  | 5.51  |
| 180.0           | 6.02  | 5.96  | 6.13  | 7.65  | 9.79  | 11.98 | 13.78 | 14.29 | 14.68 |
| 225.0           | 5.85  | 5.79  | 5.74  | 5.63  | 5.57  | 6.13  | 6.64  | 7.03  | 7.20  |
| 270.0           | 5.74  | 5.63  | 5.57  | 5.46  | 5.40  | 5.34  | 5.29  | 5.23  | 5.18  |
| 315.0           | 5.85  | 5.74  | 5.68  | 5.63  | 5.51  | 5.46  | 5.40  | 5.34  | 5.29  |
| 360.0           | 6.02  | 6.19  | 7.71  | 10.29 | 13.11 | 15.69 | 16.82 | 16.88 | 16.43 |
| C/ $\gamma$ (°) | 72.0  | 73.0  | 74.0  | 75.0  | 76.0  | 77.0  | 78.0  | 79.0  | 80.0  |
| 0.0             | 16.14 | 15.75 | 15.19 | 14.68 | 13.84 | 11.87 | 8.38  | 6.02  | 5.85  |
| 45.0            | 7.14  | 7.03  | 6.81  | 6.58  | 6.53  | 6.24  | 5.34  | 5.12  | 5.06  |
| 90.0            | 5.12  | 5.06  | 5.06  | 5.01  | 5.01  | 4.95  | 4.89  | 4.95  | 4.89  |
| 135.0           | 5.51  | 5.46  | 5.40  | 5.40  | 5.34  | 5.29  | 5.29  | 5.29  | 5.23  |
| 180.0           | 14.91 | 14.91 | 14.68 | 14.40 | 14.12 | 13.28 | 10.41 | 7.43  | 5.96  |
| 225.0           | 7.20  | 7.14  | 6.98  | 6.98  | 6.81  | 6.81  | 6.64  | 5.57  | 5.12  |
| 270.0           | 5.12  | 5.06  | 5.06  | 5.01  | 4.95  | 4.95  | 4.89  | 4.89  | 4.84  |
| 315.0           | 5.23  | 5.18  | 5.18  | 5.12  | 5.12  | 5.06  | 5.06  | 5.01  | 5.01  |
| 360.0           | 16.14 | 15.75 | 15.19 | 14.68 | 13.84 | 11.87 | 8.38  | 6.02  | 5.85  |
| C/ $\gamma$ (°) | 81.0  | 82.0  | 83.0  | 84.0  | 85.0  | 86.0  | 87.0  | 88.0  | 89.0  |
| 0.0             | 5.34  | 5.18  | 5.18  | 5.18  | 5.18  | 5.12  | 5.06  | 4.56  | 4.44  |
| 45.0            | 4.95  | 4.95  | 4.95  | 4.89  | 4.84  | 4.78  | 4.73  | 4.50  | 4.44  |
| 90.0            | 4.89  | 4.89  | 4.89  | 4.84  | 4.78  | 4.73  | 4.67  | 4.56  | 4.44  |
| 135.0           | 5.23  | 5.23  | 5.23  | 5.23  | 5.18  | 5.18  | 5.01  | 4.95  | 4.84  |
| 180.0           | 5.68  | 5.40  | 5.40  | 5.51  | 5.51  | 5.34  | 5.23  | 5.18  | 5.06  |
| 225.0           | 5.01  | 5.01  | 4.95  | 4.95  | 4.89  | 4.89  | 4.84  | 4.78  | 4.78  |
| 270.0           | 4.84  | 4.78  | 4.78  | 4.78  | 4.78  | 4.73  | 4.67  | 4.67  | 4.56  |
| 315.0           | 5.01  | 4.95  | 4.95  | 4.95  | 4.89  | 4.84  | 4.78  | 4.61  | 4.56  |
| 360.0           | 5.34  | 5.18  | 5.18  | 5.18  | 5.18  | 5.12  | 5.06  | 4.56  | 4.44  |

## Intensity data(cd)

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|                       |      |
|-----------------------|------|
| C/ $\gamma(^{\circ})$ | 90.0 |
| 0.0                   | 4.44 |
| 45.0                  | 4.44 |
| 90.0                  | 4.44 |
| 135.0                 | 4.56 |
| 180.0                 | 4.44 |
| 225.0                 | 4.50 |
| 270.0                 | 4.44 |
| 315.0                 | 4.56 |
| 360.0                 | 4.44 |