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LumCAT: Ledino Altona SN3

Luminaire: 12 W 4000 K

Report No:

Voltage(V): 230.0700

Test No: CH/BG6-1911988-01

Current(A): 0.0950

LampCAT:

Power (W): 11.5190

Lamp flux(lm)

PF: 0.5253

Number of Lamps: 1

Ballast type:

Length(mm): 270

Width(mm): 270

Phm Type: C

Height(mm): 70

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### Photometric Results

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Lumens(lm): 969.69

Lumens(lm)/Power(W): 84.18

Central intensity(cd): 267.606

Maximum intensity(cd): 267.606

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

Beam Angle(50%Imax): [C0/180]Total=117.6

[C90/270]Total=117.4

Field angle(10%Imax): [C0/180]Total=195.1

[C90/270]Total=194.5

Maximum s/h(1/2): C0\_180=1.27 C90\_270=1.28

Maximum s/h(1/4): C0\_180=1.40 C90\_270=1.40

Up flux rate of LUM(%): 11.22%

Down flux rate of LUM(%): 88.78%

CIE Type : Semidirect lighting

Output flux ratio in  $\pi$  solid angle : 63.722%

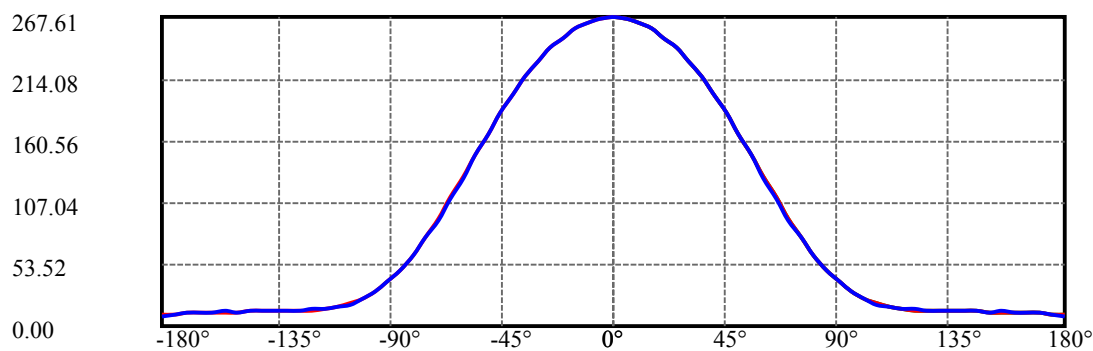
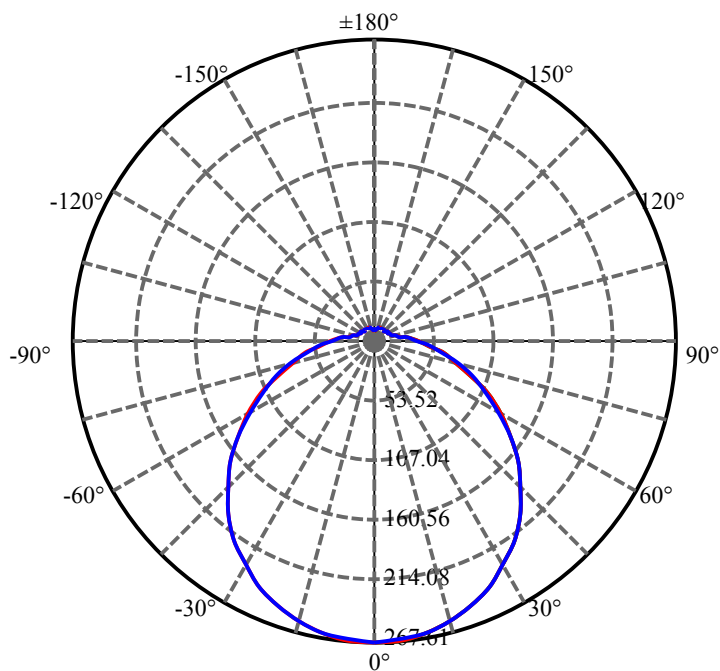
| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 0.0                | 267.036       | .000        | .000      | .000%       | .000%      |
| 5.0                | 265.914       | 6.371       | 6.371     | .657%       | .657%      |
| 10.0               | 262.513       | 18.904      | 25.275    | 1.949%      | 2.606%     |
| 15.0               | 257.237       | 30.831      | 56.106    | 3.179%      | 5.786%     |
| 20.0               | 249.850       | 41.791      | 97.897    | 4.310%      | 10.096%    |
| 25.0               | 240.269       | 51.404      | 149.302   | 5.301%      | 15.397%    |
| 30.0               | 228.862       | 59.369      | 208.670   | 6.122%      | 21.519%    |
| 35.0               | 215.713       | 65.467      | 274.137   | 6.751%      | 28.271%    |
| 40.0               | 200.604       | 69.459      | 343.596   | 7.163%      | 35.434%    |
| 45.0               | 184.138       | 71.238      | 414.834   | 7.346%      | 42.780%    |
| 50.0               | 166.349       | 70.821      | 485.655   | 7.303%      | 50.084%    |
| 55.0               | 147.957       | 68.341      | 553.996   | 7.048%      | 57.131%    |
| 60.0               | 128.543       | 63.912      | 617.908   | 6.591%      | 63.722%    |
| 65.0               | 109.866       | 57.958      | 675.866   | 5.977%      | 69.699%    |
| 70.0               | 92.027        | 51.121      | 726.987   | 5.272%      | 74.971%    |
| 75.0               | 75.729        | 43.849      | 770.835   | 4.522%      | 79.493%    |
| 80.0               | 61.072        | 36.604      | 807.439   | 3.775%      | 83.268%    |
| 85.0               | 48.509        | 29.776      | 837.215   | 3.071%      | 86.339%    |
| 90.0               | 38.024        | 23.693      | 860.909   | 2.443%      | 88.782%    |
| 95.0               | 29.498        | 18.488      | 879.397   | 1.907%      | 90.689%    |
| 100.0              | 23.266        | 14.337      | 893.734   | 1.479%      | 92.167%    |
| 105.0              | 18.945        | 11.295      | 905.028   | 1.165%      | 93.332%    |
| 110.0              | 16.449        | 9.251       | 914.280   | .954%       | 94.286%    |
| 115.0              | 14.858        | 7.927       | 922.207   | .817%       | 95.103%    |
| 120.0              | 14.121        | 7.045       | 929.252   | .726%       | 95.830%    |
| 125.0              | 13.769        | 6.447       | 935.698   | .665%       | 96.495%    |
| 130.0              | 13.300        | 5.886       | 941.584   | .607%       | 97.102%    |
| 135.0              | 13.032        | 5.321       | 946.904   | .549%       | 97.650%    |
| 140.0              | 12.680        | 4.761       | 951.665   | .491%       | 98.141%    |
| 145.0              | 12.663        | 4.228       | 955.894   | .436%       | 98.577%    |
| 150.0              | 12.446        | 3.697       | 959.591   | .381%       | 98.959%    |
| 155.0              | 12.563        | 3.165       | 962.756   | .326%       | 99.285%    |
| 160.0              | 12.479        | 2.626       | 965.382   | .271%       | 99.556%    |
| 165.0              | 11.843        | 2.004       | 967.387   | .207%       | 99.763%    |
| 170.0              | 10.787        | 1.342       | 968.729   | .138%       | 99.901%    |
| 175.0              | 9.699         | .733        | 969.462   | .076%       | 99.977%    |
| 180.0              | 9.280         | .227        | 969.689   | .023%       | 100.000%   |

ZONAL LUMEN SUMMARY

| Zone    | Lumens | %Fixt   |
|---------|--------|---------|
| 0-30    | 208.67 | 21.52%  |
| 0-40    | 343.60 | 35.43%  |
| 0-60    | 617.91 | 63.72%  |
| 0-90    | 860.91 | 88.78%  |
| 0-120   | 929.25 | 95.83%  |
| 0-180   | 969.69 | 100.00% |
| 60-90   | 306.91 | 31.65%  |
| 90-120  | 92.04  | 9.49%   |
| 90-130  | 104.37 | 10.76%  |
| 90-150  | 122.38 | 12.62%  |
| 90-180  | 132.25 | 13.64%  |
| 0-75.67 | 775.75 | 80.00%  |

ZONAL LUMEN SUMMARY

|         |        |
|---------|--------|
| 0-10    | 25.27  |
| 10-20   | 72.62  |
| 20-30   | 110.77 |
| 30-40   | 134.93 |
| 40-50   | 142.06 |
| 50-60   | 132.25 |
| 60-70   | 109.08 |
| 70-80   | 80.45  |
| 80-90   | 53.47  |
| 90-100  | 32.83  |
| 100-110 | 20.55  |
| 110-120 | 14.97  |
| 120-130 | 12.33  |
| 130-140 | 10.08  |
| 140-150 | 7.93   |
| 150-160 | 5.79   |
| 160-170 | 3.35   |
| 170-180 | 0.73   |



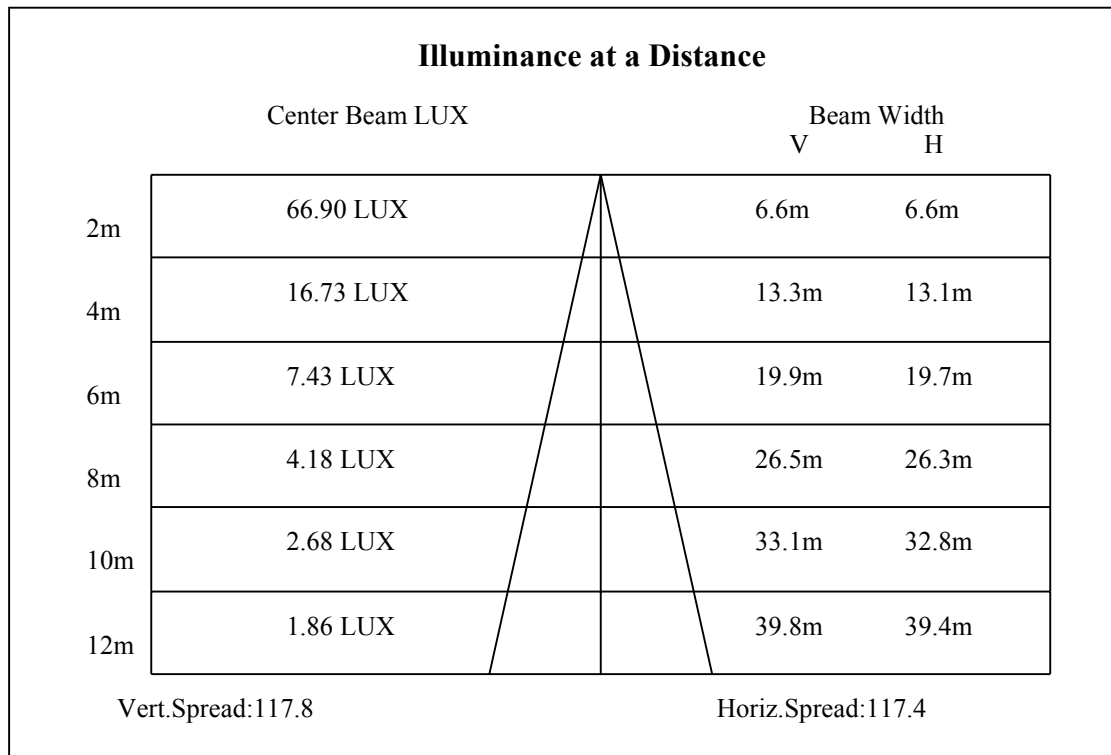
C0(Max): —————

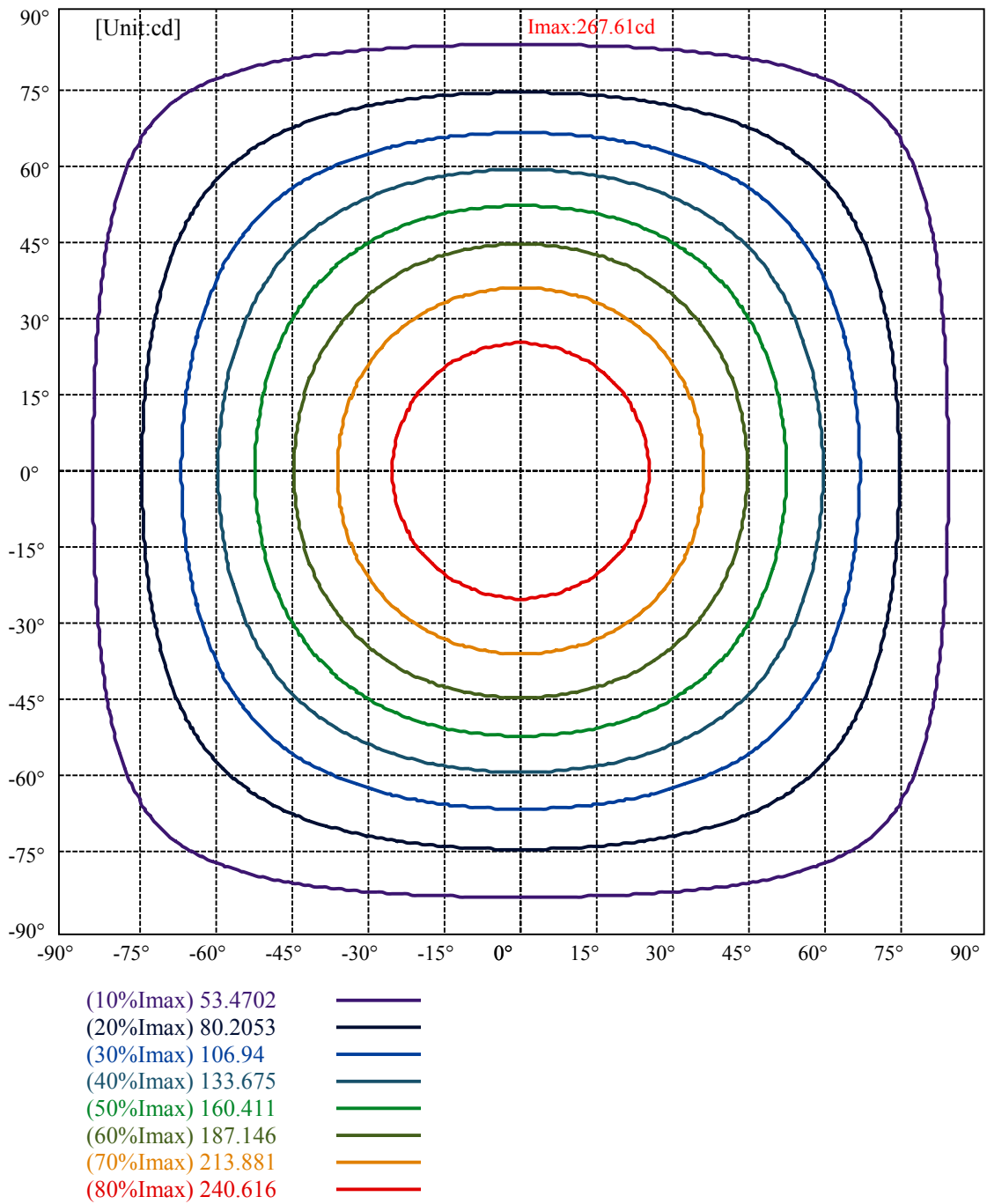
C0/C180: —————

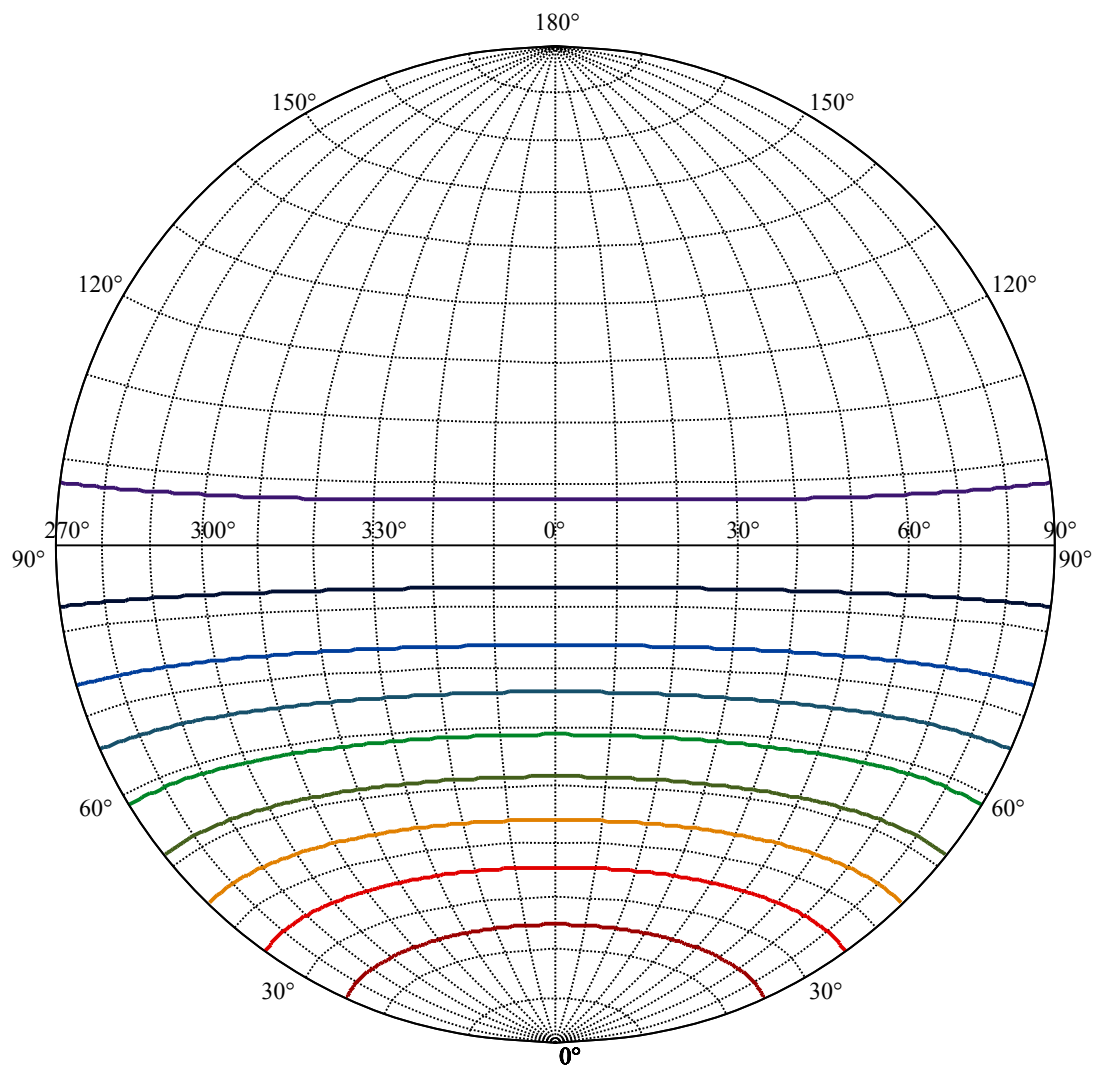
C90/C270: —————

Field angle(10%Imax):C0/180Left:97.5 Right:97.5  
:C90/270Left:97.3 Right:97.3

Beam Angle(50%Imax):C0/180Left:58.8 Right:58.8  
:C90/270Left:58.7 Right:58.7
















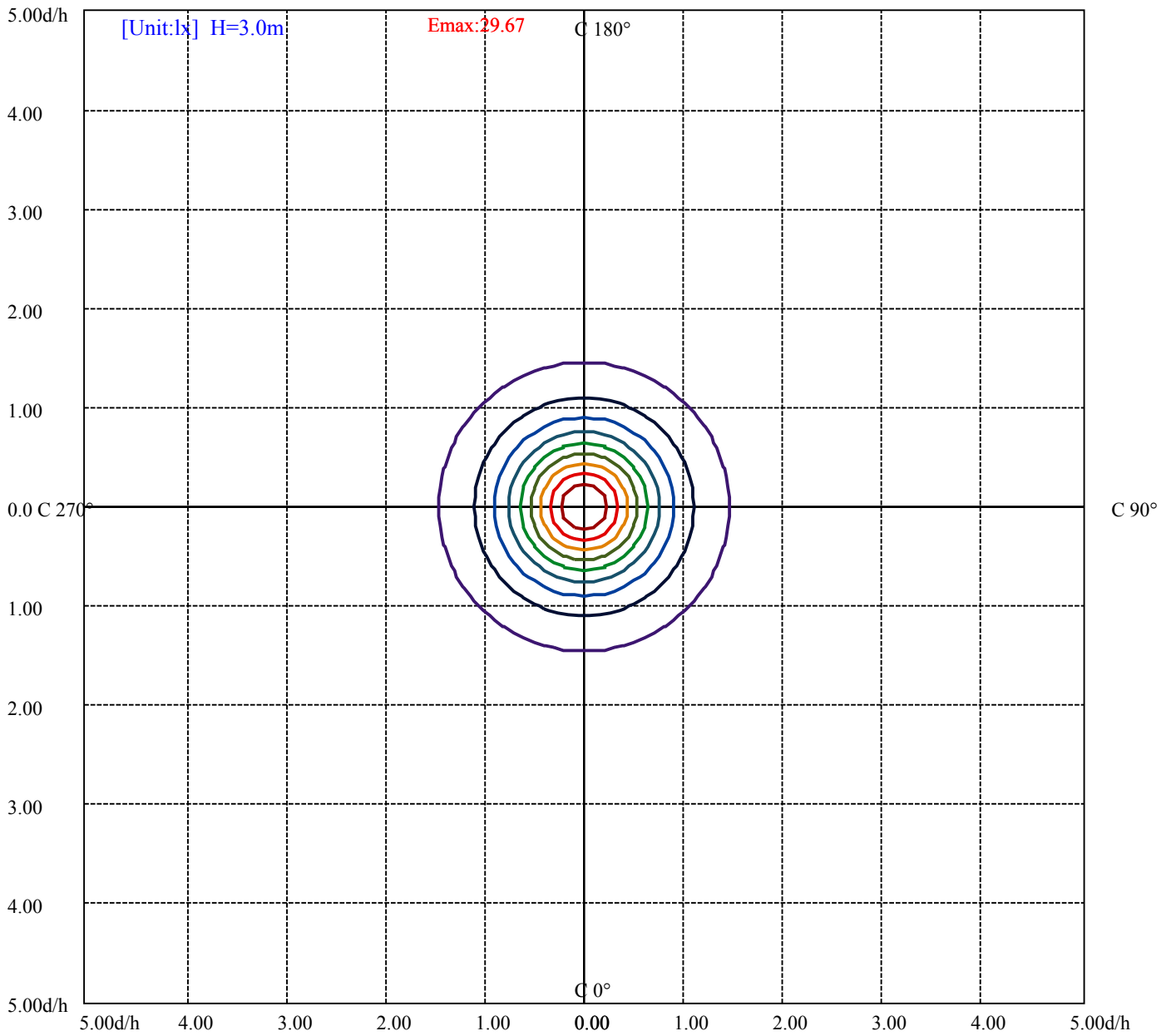
House

[Unit:cd]

Road

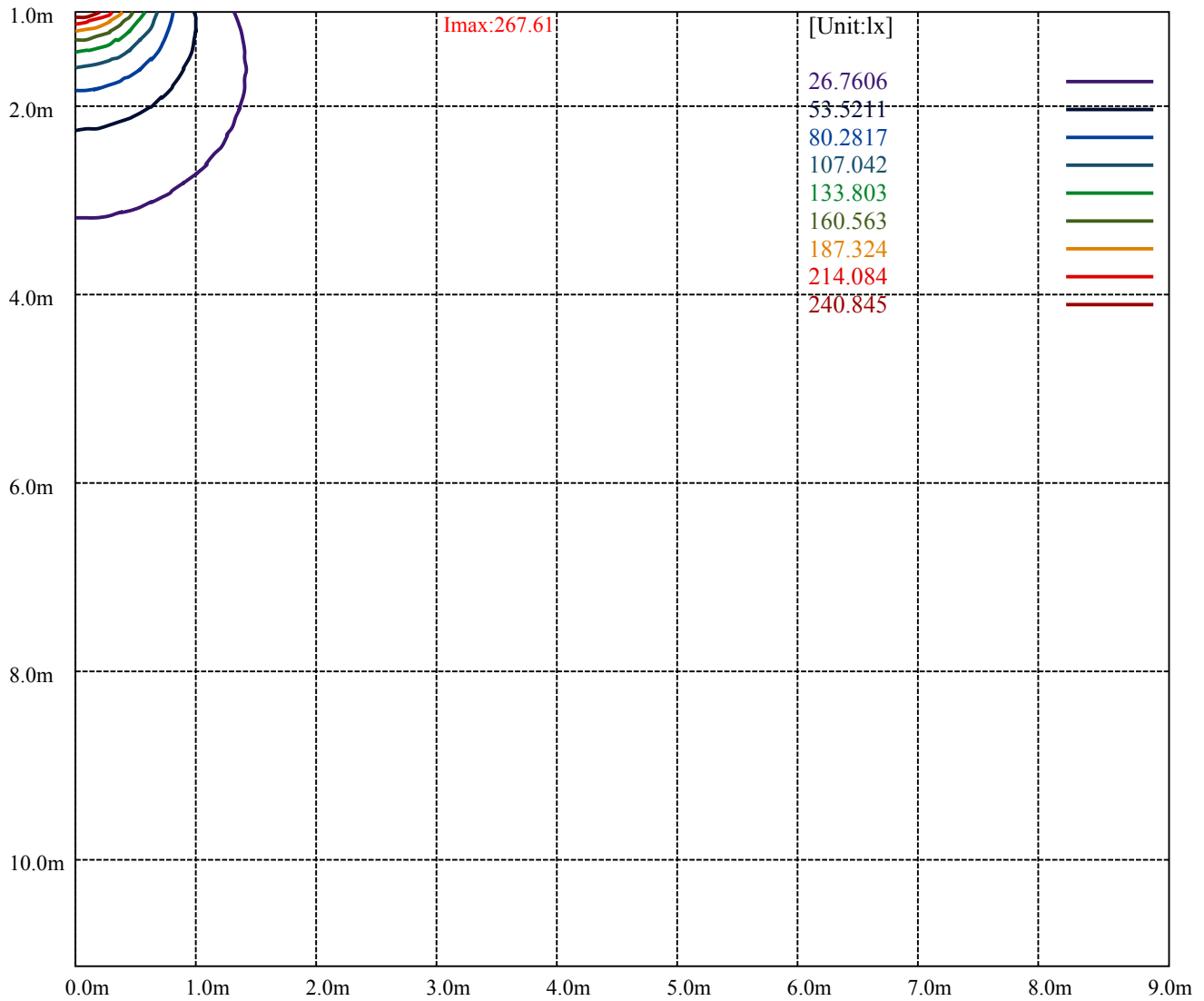
**I<sub>max</sub>:267.61**

|                                |   |
|--------------------------------|---|
| (10%I <sub>max</sub> ) 26.7606 |  |
| (20%I <sub>max</sub> ) 53.5211 |  |
| (30%I <sub>max</sub> ) 80.2817 |  |
| (40%I <sub>max</sub> ) 107.042 |  |
| (50%I <sub>max</sub> ) 133.803 |  |
| (60%I <sub>max</sub> ) 160.563 |  |
| (70%I <sub>max</sub> ) 187.324 |  |
| (80%I <sub>max</sub> ) 214.084 |  |
| (90%I <sub>max</sub> ) 240.845 |  |



- (10%Emax) 2.967433
- (20%Emax) 5.934877
- (30%Emax) 8.90231
- (40%Emax) 11.86978
- (50%Emax) 14.83722
- (60%Emax) 17.80467
- (70%Emax) 20.77211
- (80%Emax) 23.73956
- (90%Emax) 26.707





Luminance Table

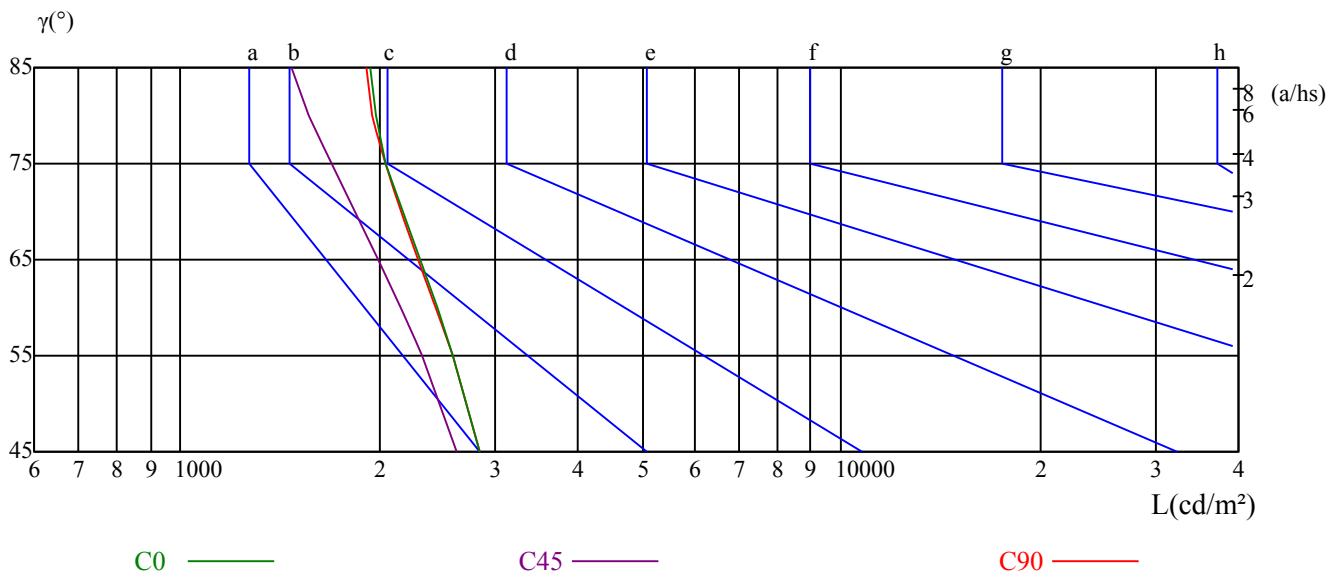
| $\gamma$ | 45   | 50   | 55   | 60   | 65   | 70   | 75   | 80   | 85   |
|----------|------|------|------|------|------|------|------|------|------|
| C0       | 2840 | 2714 | 2591 | 2447 | 2308 | 2166 | 2045 | 1973 | 1942 |
| C45      | 2613 | 2469 | 2320 | 2153 | 1991 | 1835 | 1693 | 1562 | 1469 |
| C90      | 2836 | 2713 | 2579 | 2429 | 2289 | 2155 | 2039 | 1945 | 1916 |

| L横(65) | L纵(65) | L45(65) | L横(75) | L纵(75) | L45(75) | L横(85) | L纵(85) | L45(85) |
|--------|--------|---------|--------|--------|---------|--------|--------|---------|
| 3591   | 3562   | 3556    | 4023   | 4013   | 4009    | 7698   | 7593   | 7624    |

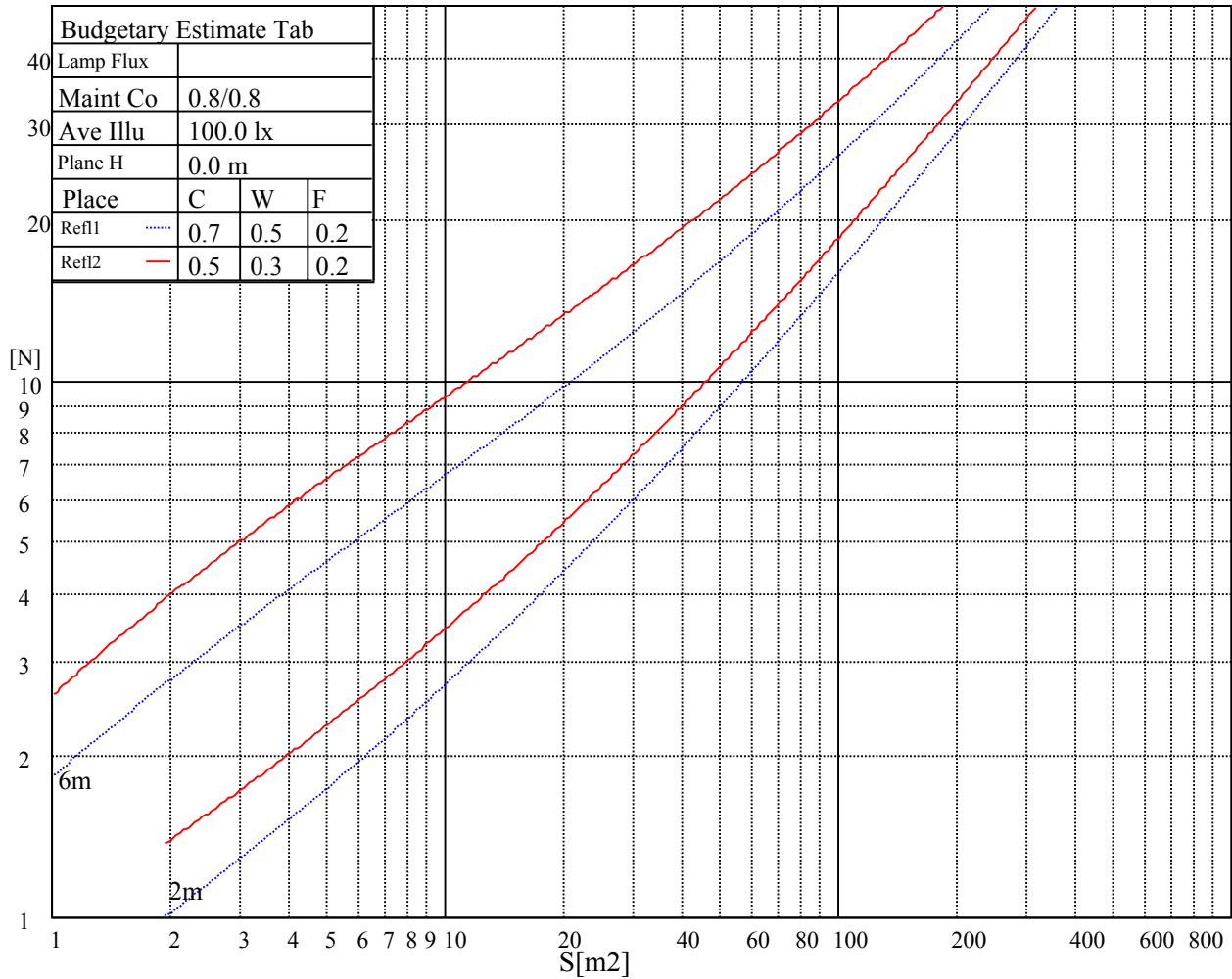
Glare Table

| 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     |

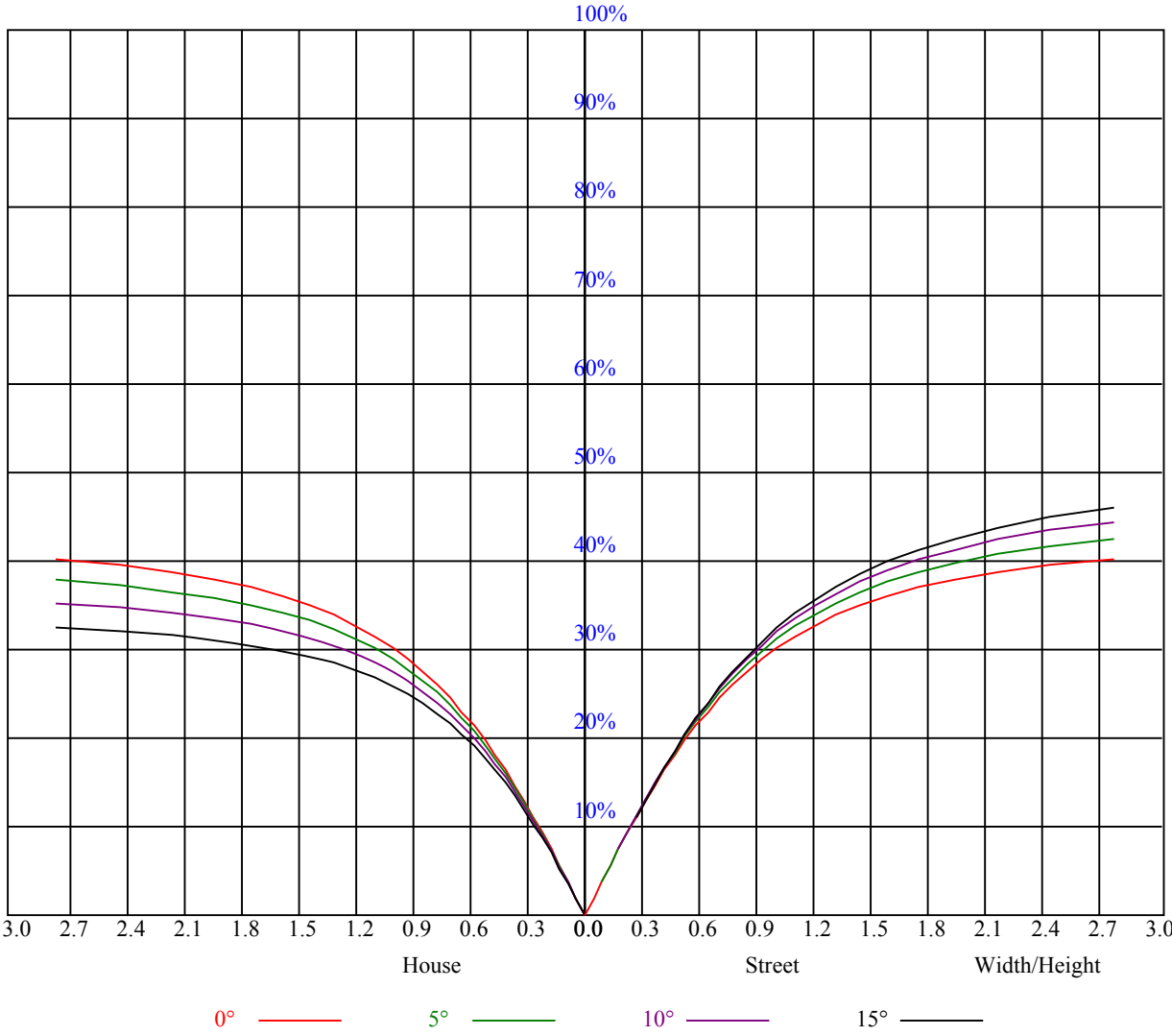
Luminance Limiting Curve



| Illumination assessment according UGR             |          |                  |       |       |       |          |                |       |       |       |       |
|---|----------|------------------|-------|-------|-------|----------|----------------|-------|-------|-------|-------|
| Rf of Ceiling                                     | 70       | 70               | 50    | 50    | 30    | 70       | 70             | 50    | 50    | 30    |       |
| Rf of Wall  | 50       | 30               | 50    | 30    | 30    | 50       | 30             | 50    | 30    | 30    |       |
| Rf of Floor                                       | 20       | 20               | 20    | 20    | 20    | 20       | 20             | 20    | 20    | 20    |       |
| Room dimensions                                   |          | Viewed crosswise |       |       |       |          | Viewed endwise |       |       |       |       |
| X   | Y        |                  |       |       |       |          |                |       |       |       |       |
| 2H  | 2H       | 14.73            | 16.18 | 15.25 | 16.71 | 17.28    | 14.75          | 16.21 | 15.28 | 16.73 | 17.31 |
|   | 3H       | 16.45            | 17.78 | 16.99 | 18.32 | 18.93    | 16.48          | 17.81 | 17.02 | 18.34 | 18.96 |
|   | 4H       | 17.23            | 18.49 | 17.78 | 19.04 | 19.66    | 17.25          | 18.51 | 17.81 | 19.06 | 19.69 |
|   | 6H       | 17.95            | 19.12 | 18.52 | 19.69 | 20.33    | 17.98          | 19.16 | 18.55 | 19.72 | 20.36 |
|   | 8H       | 18.27            | 19.40 | 18.86 | 19.99 | 20.61    | 18.31          | 19.44 | 18.90 | 20.02 | 20.65 |
|   | 12H      | 18.78            | 19.86 | 19.37 | 20.44 | 21.12    | 18.83          | 19.91 | 19.42 | 20.49 | 21.16 |
| 4H  | 2H       | 15.21            | 16.47 | 15.77 | 17.02 | 17.65    | 15.23          | 16.49 | 15.79 | 17.04 | 17.67 |
|   | 3H       | 17.19            | 18.26 | 17.76 | 18.85 | 19.50    | 17.21          | 18.29 | 17.78 | 18.88 | 19.53 |
|   | 4H       | 18.12            | 19.10 | 18.71 | 19.70 | 20.38    | 18.14          | 19.12 | 18.73 | 19.72 | 20.40 |
|   | 6H       | 18.84            | 19.74 | 19.48 | 20.37 | 21.06    | 18.87          | 19.77 | 19.51 | 20.39 | 21.09 |
|   | 8H       | 19.30            | 20.12 | 19.91 | 20.74 | 21.45    | 19.33          | 20.15 | 19.95 | 20.78 | 21.48 |
|   | 12H      | 19.85            | 20.59 | 20.49 | 21.25 | 21.96    | 19.89          | 20.64 | 20.53 | 21.29 | 22.00 |
| 8H  | 4H       | 18.45            | 19.27 | 19.07 | 19.89 | 20.60    | 18.47          | 19.29 | 19.08 | 19.91 | 20.62 |
|   | 6H       | 19.39            | 20.93 | 20.04 | 20.75 | 21.46    | 19.42          | 20.96 | 20.07 | 20.78 | 21.49 |
|   | 8H       | 19.94            | 20.57 | 20.60 | 21.24 | 21.97    | 19.98          | 20.60 | 20.63 | 21.28 | 22.00 |
|   | 12H      | 20.71            | 21.27 | 21.37 | 22.61 | 22.71    | 20.75          | 21.31 | 21.41 | 22.65 | 22.76 |
| 12H   | 4H       | 18.51            | 19.25 | 19.14 | 19.90 | 20.61    | 18.52          | 19.27 | 19.16 | 19.92 | 20.63 |
|   | 6H       | 20.53            | 20.14 | 20.18 | 20.78 | 21.55    | 20.56          | 20.17 | 20.21 | 20.81 | 21.57 |
|   | 8H       | 20.13            | 20.69 | 20.79 | 21.35 | 22.14    | 20.16          | 20.72 | 20.82 | 21.38 | 22.17 |
| Variation with the observer position at spacings: |          |                  |       |       |       |          |                |       |       |       |       |
| S = 1.0H  | 0.2/-0.8 |                  |       |       |       | 0.2/-0.8 |                |       |       |       |       |
| S = 1.5H  | 0.5/-0.6 |                  |       |       |       | 0.5/-0.6 |                |       |       |       |       |
| S = 2.0H  | 0.5/-0.6 |                  |       |       |       | 0.5/-0.6 |                |       |       |       |       |
| Standard tables:                                  | BKBF     |                  |       |       |       | BKBF     |                |       |       |       |       |
| Uncorrected UGR                                   | 4.8      |                  |       |       |       | 4.8      |                |       |       |       |       |



| 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 RHOF=20 CU |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 0     | 1.16                                   | 1.16 | 1.16 | 1.12 | 1.12 | 1.12 | 1.05 | 1.05 | 1.05 | 0.98 | 0.98 | 0.98 | 0.92 | 0.92 | 0.92 | 0.89 |
| 1     | 0.99                                   | 0.94 | 0.89 | 0.95 | 0.91 | 0.87 | 0.89 | 0.85 | 0.82 | 0.83 | 0.80 | 0.78 | 0.78 | 0.75 | 0.73 | 0.70 |
| 2     | 0.85                                   | 0.78 | 0.72 | 0.82 | 0.76 | 0.70 | 0.77 | 0.71 | 0.66 | 0.72 | 0.67 | 0.63 | 0.67 | 0.64 | 0.60 | 0.57 |
| 3     | 0.74                                   | 0.66 | 0.59 | 0.72 | 0.64 | 0.58 | 0.67 | 0.61 | 0.55 | 0.63 | 0.57 | 0.53 | 0.59 | 0.54 | 0.50 | 0.48 |
| 4     | 0.66                                   | 0.56 | 0.49 | 0.64 | 0.55 | 0.48 | 0.60 | 0.52 | 0.47 | 0.56 | 0.50 | 0.45 | 0.52 | 0.47 | 0.43 | 0.40 |
| 5     | 0.58                                   | 0.49 | 0.42 | 0.57 | 0.48 | 0.42 | 0.53 | 0.46 | 0.40 | 0.50 | 0.44 | 0.39 | 0.47 | 0.42 | 0.37 | 0.35 |
| 6     | 0.52                                   | 0.43 | 0.37 | 0.51 | 0.42 | 0.36 | 0.48 | 0.40 | 0.35 | 0.45 | 0.39 | 0.34 | 0.43 | 0.37 | 0.33 | 0.30 |
| 7     | 0.47                                   | 0.39 | 0.32 | 0.46 | 0.38 | 0.32 | 0.44 | 0.36 | 0.31 | 0.41 | 0.35 | 0.30 | 0.39 | 0.33 | 0.29 | 0.27 |
| 8     | 0.43                                   | 0.35 | 0.29 | 0.42 | 0.34 | 0.28 | 0.40 | 0.33 | 0.27 | 0.38 | 0.31 | 0.27 | 0.36 | 0.30 | 0.26 | 0.24 |
| 9     | 0.40                                   | 0.31 | 0.26 | 0.39 | 0.31 | 0.25 | 0.37 | 0.29 | 0.25 | 0.35 | 0.28 | 0.24 | 0.33 | 0.27 | 0.23 | 0.21 |
| 10    | 0.36                                   | 0.28 | 0.23 | 0.36 | 0.28 | 0.23 | 0.34 | 0.27 | 0.22 | 0.32 | 0.26 | 0.22 | 0.31 | 0.25 | 0.21 | 0.19 |



## Intensity data(cd)

Page: 15 Total:15

|                 |        |        |        |        |        |        |        |        |        |
|-----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| C/ $\gamma$ (°) | 0.0    | 5.0    | 10.0   | 15.0   | 20.0   | 25.0   | 30.0   | 35.0   | 40.0   |
| 0.0             | 267.61 | 266.33 | 262.65 | 257.69 | 250.12 | 240.60 | 229.08 | 215.95 | 200.80 |
| 45.0            | 267.07 | 265.83 | 262.55 | 257.12 | 249.78 | 240.03 | 228.68 | 215.58 | 200.54 |
| 90.0            | 266.80 | 265.66 | 262.31 | 257.02 | 249.72 | 240.40 | 229.01 | 215.75 | 200.54 |
| 135.0           | 266.67 | 265.83 | 262.55 | 257.12 | 249.78 | 240.03 | 228.68 | 215.58 | 200.54 |
| 180.0           | 267.61 | 266.33 | 262.65 | 257.69 | 250.12 | 240.60 | 229.08 | 215.95 | 200.80 |
| 225.0           | 267.07 | 265.83 | 262.55 | 257.12 | 249.78 | 240.03 | 228.68 | 215.58 | 200.54 |
| 270.0           | 266.80 | 265.66 | 262.31 | 257.02 | 249.72 | 240.40 | 229.01 | 215.75 | 200.54 |
| 315.0           | 266.67 | 265.83 | 262.55 | 257.12 | 249.78 | 240.03 | 228.68 | 215.58 | 200.54 |
| 360.0           | 267.61 | 266.33 | 262.65 | 257.69 | 250.12 | 240.60 | 229.08 | 215.95 | 200.80 |
| C/ $\gamma$ (°) | 45.0   | 50.0   | 55.0   | 60.0   | 65.0   | 70.0   | 75.0   | 80.0   | 85.0   |
| 0.0             | 184.32 | 166.50 | 148.48 | 129.25 | 110.62 | 92.46  | 75.91  | 61.71  | 48.91  |
| 45.0            | 184.05 | 166.23 | 147.81 | 128.31 | 109.55 | 91.83  | 75.65  | 60.87  | 48.44  |
| 90.0            | 184.12 | 166.43 | 147.74 | 128.31 | 109.75 | 91.99  | 75.71  | 60.84  | 48.24  |
| 135.0           | 184.05 | 166.23 | 147.81 | 128.31 | 109.55 | 91.83  | 75.65  | 60.87  | 48.44  |
| 180.0           | 184.32 | 166.50 | 148.48 | 129.25 | 110.62 | 92.46  | 75.91  | 61.71  | 48.91  |
| 225.0           | 184.05 | 166.23 | 147.81 | 128.31 | 109.55 | 91.83  | 75.65  | 60.87  | 48.44  |
| 270.0           | 184.12 | 166.43 | 147.74 | 128.31 | 109.75 | 91.99  | 75.71  | 60.84  | 48.24  |
| 315.0           | 184.05 | 166.23 | 147.81 | 128.31 | 109.55 | 91.83  | 75.65  | 60.87  | 48.44  |
| 360.0           | 184.32 | 166.50 | 148.48 | 129.25 | 110.62 | 92.46  | 75.91  | 61.71  | 48.91  |
| C/ $\gamma$ (°) | 90.0   | 95.0   | 100.0  | 105.0  | 110.0  | 115.0  | 120.0  | 125.0  | 130.0  |
| 0.0             | 38.79  | 29.75  | 23.85  | 19.43  | 16.55  | 15.08  | 14.07  | 13.67  | 13.07  |
| 45.0            | 37.76  | 29.35  | 23.02  | 18.73  | 16.42  | 14.84  | 14.14  | 13.84  | 13.40  |
| 90.0            | 37.79  | 29.55  | 23.18  | 18.89  | 16.42  | 14.67  | 14.14  | 13.74  | 13.33  |
| 135.0           | 37.76  | 29.35  | 23.02  | 18.73  | 16.42  | 14.84  | 14.14  | 13.84  | 13.40  |
| 180.0           | 38.79  | 29.75  | 23.85  | 19.43  | 16.55  | 15.08  | 14.07  | 13.67  | 13.07  |
| 225.0           | 37.76  | 29.35  | 23.02  | 18.73  | 16.42  | 14.84  | 14.14  | 13.84  | 13.40  |
| 270.0           | 37.79  | 29.55  | 23.18  | 18.89  | 16.42  | 14.67  | 14.14  | 13.74  | 13.33  |
| 315.0           | 37.76  | 29.35  | 23.02  | 18.73  | 16.42  | 14.84  | 14.14  | 13.84  | 13.40  |
| 360.0           | 38.79  | 29.75  | 23.85  | 19.43  | 16.55  | 15.08  | 14.07  | 13.67  | 13.07  |
| C/ $\gamma$ (°) | 135.0  | 140.0  | 145.0  | 150.0  | 155.0  | 160.0  | 165.0  | 170.0  | 175.0  |
| 0.0             | 13.07  | 12.66  | 12.73  | 12.46  | 12.46  | 12.40  | 11.66  | 10.85  | 9.78   |
| 45.0            | 13.00  | 12.70  | 12.70  | 12.46  | 12.60  | 12.53  | 11.93  | 10.65  | 9.68   |
| 90.0            | 13.07  | 12.66  | 12.53  | 12.40  | 12.60  | 12.46  | 11.86  | 10.99  | 9.65   |
| 135.0           | 13.00  | 12.70  | 12.70  | 12.46  | 12.60  | 12.53  | 11.93  | 10.65  | 9.68   |
| 180.0           | 13.07  | 12.66  | 12.73  | 12.46  | 12.46  | 12.40  | 11.66  | 10.85  | 9.78   |
| 225.0           | 13.00  | 12.70  | 12.70  | 12.46  | 12.60  | 12.53  | 11.93  | 10.65  | 9.68   |
| 270.0           | 13.07  | 12.66  | 12.53  | 12.40  | 12.60  | 12.46  | 11.86  | 10.99  | 9.65   |
| 315.0           | 13.00  | 12.70  | 12.70  | 12.46  | 12.60  | 12.53  | 11.93  | 10.65  | 9.68   |
| 360.0           | 13.07  | 12.66  | 12.73  | 12.46  | 12.46  | 12.40  | 11.66  | 10.85  | 9.78   |
| C/ $\gamma$ (°) | 180.0  |        |        |        |        |        |        |        |        |
| 0.0             | 9.25   |        |        |        |        |        |        |        |        |
| 45.0            | 9.45   |        |        |        |        |        |        |        |        |
| 90.0            | 8.98   |        |        |        |        |        |        |        |        |
| 135.0           | 9.45   |        |        |        |        |        |        |        |        |
| 180.0           | 9.25   |        |        |        |        |        |        |        |        |
| 225.0           | 9.45   |        |        |        |        |        |        |        |        |
| 270.0           | 8.98   |        |        |        |        |        |        |        |        |
| 315.0           | 9.45   |        |        |        |        |        |        |        |        |
| 360.0           | 9.25   |        |        |        |        |        |        |        |        |