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## Nata

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|                         |                     |
|-------------------------|---------------------|
| LumCAT: 3-2031-M        |                     |
| Luminaire: 92.70.127.00 |                     |
| Report No: GC2017081410 | Voltage(V): 37.4000 |
| Test No: NT-0010        | Current(A): 0.3000  |
| LampCAT: CREE CXA1512   | Power (W): 11.2200  |
| Lamp flux(lm): 1330.0   | PF: 0.0000          |
| Number of Lamps: 1      | Ballast type: DC    |
| Length(mm): 79          | Width(mm): 79       |
| Phm Type: C             | Height(mm): 0       |

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## Photometric Results

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Lumens(lm): 1199.50  
Efficiency(%): 90.19%  
Lumens(lm)/Power(W): 106.91  
Central intensity(cd): 14225.940  
Maximum intensity(cd): 14225.940  
Angle of maximum intensity: C=0.0  $\gamma$ =0.0  
Beam Angle(50%Imax): [C0/180]Total=11.4  
[C90/270]Total=11.4  
Field angle(10%Imax): [C0/180]Total=22.5  
[C90/270]Total=22.5  
Maximum s/h(1/2): C0\_180=0.20 C90\_270=0.20  
Maximum s/h(1/4): C0\_180=0.20 C90\_270=0.20  
Up flux rate of lamp(%): 0.00%  
Down flux rate of lamp(%): 90.19%  
Up flux rate of LUM(%): - -  
Down flux rate of LUM(%): 100.00%  
CIE Type : Direct lighting  
Output flux ratio in  $\pi$  solid angle : 98.699%

| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 0.0                | 14225.940     | 0.000       | 0         | .000%       | .000%      |
| 1.0                | 13836.101     | 13.427      | 13.427    | 1.010%      | 1.119%     |
| 2.0                | 12990.753     | 38.504      | 51.932    | 2.895%      | 4.329%     |
| 3.0                | 11600.089     | 58.813      | 110.745   | 4.422%      | 9.233%     |
| 4.0                | 9973.254      | 72.213      | 182.958   | 5.430%      | 15.253%    |
| 5.0                | 8227.185      | 78.297      | 261.255   | 5.887%      | 21.780%    |
| 6.0                | 6581.428      | 77.823      | 339.078   | 5.851%      | 28.268%    |
| 7.0                | 5177.825      | 72.989      | 412.068   | 5.488%      | 34.353%    |
| 8.0                | 3793.978      | 64.209      | 476.277   | 4.828%      | 39.706%    |
| 9.0                | 2779.533      | 53.275      | 529.552   | 4.006%      | 44.148%    |
| 10.0               | 1975.507      | 43.031      | 572.583   | 3.235%      | 47.735%    |
| 11.0               | 1522.141      | 34.949      | 607.532   | 2.628%      | 50.649%    |
| 12.0               | 1113.004      | 28.806      | 636.338   | 2.166%      | 53.050%    |
| 13.0               | 894.620       | 23.825      | 660.163   | 1.791%      | 55.037%    |
| 14.0               | 769.460       | 21.300      | 681.463   | 1.602%      | 56.812%    |
| 15.0               | 682.755       | 19.937      | 701.4     | 1.499%      | 58.474%    |
| 16.0               | 625.121       | 19.164      | 720.564   | 1.441%      | 60.072%    |
| 17.0               | 586.081       | 18.862      | 739.426   | 1.418%      | 61.644%    |
| 18.0               | 557.546       | 18.856      | 758.282   | 1.418%      | 63.216%    |
| 19.0               | 539.661       | 19.089      | 777.371   | 1.435%      | 64.808%    |
| 20.0               | 523.348       | 19.456      | 796.827   | 1.463%      | 66.430%    |
| 21.0               | 509.539       | 19.834      | 816.66    | 1.491%      | 68.083%    |
| 22.0               | 498.131       | 20.250      | 836.91    | 1.523%      | 69.772%    |
| 23.0               | 486.792       | 20.666      | 857.576   | 1.554%      | 71.494%    |
| 24.0               | 476.475       | 21.060      | 878.637   | 1.583%      | 73.250%    |
| 25.0               | 467.230       | 21.458      | 900.094   | 1.613%      | 75.039%    |
| 26.0               | 459.105       | 21.866      | 921.961   | 1.644%      | 76.862%    |
| 27.0               | 450.715       | 22.259      | 944.22    | 1.674%      | 78.718%    |
| 28.0               | 443.369       | 22.636      | 966.856   | 1.702%      | 80.605%    |
| 29.0               | 435.042       | 22.982      | 989.838   | 1.728%      | 82.521%    |
| 30.0               | 426.785       | 23.269      | 1013.107  | 1.750%      | 84.461%    |
| 31.0               | 418.361       | 23.519      | 1036.626  | 1.768%      | 86.421%    |
| 32.0               | 402.438       | 23.515      | 1060.141  | 1.768%      | 88.382%    |
| 33.0               | 379.732       | 23.043      | 1083.184  | 1.733%      | 90.303%    |
| 34.0               | 341.819       | 21.836      | 1105.02   | 1.642%      | 92.123%    |
| 35.0               | 290.821       | 19.647      | 1124.668  | 1.477%      | 93.761%    |
| 36.0               | 228.930       | 16.549      | 1141.217  | 1.244%      | 95.141%    |
| 37.0               | 164.701       | 12.838      | 1154.055  | .965%       | 96.211%    |

| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 38.0               | 106.677       | 9.058       | 1163.113  | .681%       | 96.966%    |
| 39.0               | 56.152        | 5.558       | 1168.671  | .418%       | 97.430%    |
| 40.0               | 32.167        | 3.080       | 1171.751  | .232%       | 97.687%    |
| 41.0               | 17.412        | 1.765       | 1173.517  | .133%       | 97.834%    |
| 42.0               | 10.170        | 1.002       | 1174.519  | .075%       | 97.917%    |
| 43.0               | 8.410         | 0.688       | 1175.207  | .052%       | 97.975%    |
| 44.0               | 7.276         | 0.592       | 1175.799  | .045%       | 98.024%    |
| 45.0               | 6.769         | 0.540       | 1176.339  | .041%       | 98.069%    |
| 46.0               | 6.511         | 0.519       | 1176.858  | .039%       | 98.112%    |
| 47.0               | 6.358         | 0.512       | 1177.37   | .038%       | 98.155%    |
| 48.0               | 6.198         | 0.508       | 1177.878  | .038%       | 98.197%    |
| 49.0               | 6.087         | 0.504       | 1178.382  | .038%       | 98.239%    |
| 50.0               | 5.996         | 0.504       | 1178.886  | .038%       | 98.281%    |
| 51.0               | 5.920         | 0.504       | 1179.39   | .038%       | 98.323%    |
| 52.0               | 5.816         | 0.504       | 1179.894  | .038%       | 98.365%    |
| 53.0               | 5.732         | 0.502       | 1180.396  | .038%       | 98.407%    |
| 54.0               | 5.621         | 0.500       | 1180.896  | .038%       | 98.449%    |
| 55.0               | 5.558         | 0.499       | 1181.395  | .038%       | 98.491%    |
| 56.0               | 5.475         | 0.499       | 1181.894  | .037%       | 98.532%    |
| 57.0               | 5.419         | 0.498       | 1182.392  | .037%       | 98.574%    |
| 58.0               | 5.377         | 0.499       | 1182.891  | .038%       | 98.615%    |
| 59.0               | 5.315         | 0.500       | 1183.391  | .038%       | 98.657%    |
| 60.0               | 5.280         | 0.501       | 1183.892  | .038%       | 98.699%    |
| 61.0               | 5.231         | 0.502       | 1184.393  | .038%       | 98.741%    |
| 62.0               | 5.196         | 0.502       | 1184.896  | .038%       | 98.782%    |
| 63.0               | 5.148         | 0.503       | 1185.399  | .038%       | 98.824%    |
| 64.0               | 5.127         | 0.504       | 1185.903  | .038%       | 98.866%    |
| 65.0               | 5.106         | 0.506       | 1186.409  | .038%       | 98.909%    |
| 66.0               | 5.071         | 0.508       | 1186.917  | .038%       | 98.951%    |
| 67.0               | 5.071         | 0.510       | 1187.427  | .038%       | 98.993%    |
| 68.0               | 5.036         | 0.512       | 1187.939  | .038%       | 99.036%    |
| 69.0               | 5.009         | 0.512       | 1188.452  | .039%       | 99.079%    |
| 70.0               | 5.009         | 0.514       | 1188.966  | .039%       | 99.122%    |
| 71.0               | 4.995         | 0.517       | 1189.483  | .039%       | 99.165%    |
| 72.0               | 4.974         | 0.518       | 1190.001  | .039%       | 99.208%    |
| 73.0               | 4.953         | 0.519       | 1190.521  | .039%       | 99.251%    |
| 74.0               | 4.939         | 0.520       | 1191.041  | .039%       | 99.295%    |
| 75.0               | 4.939         | 0.522       | 1191.563  | .039%       | 99.338%    |

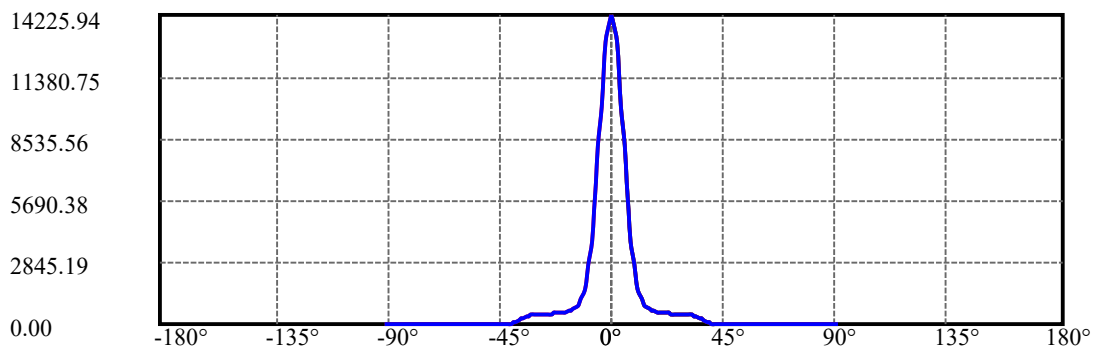
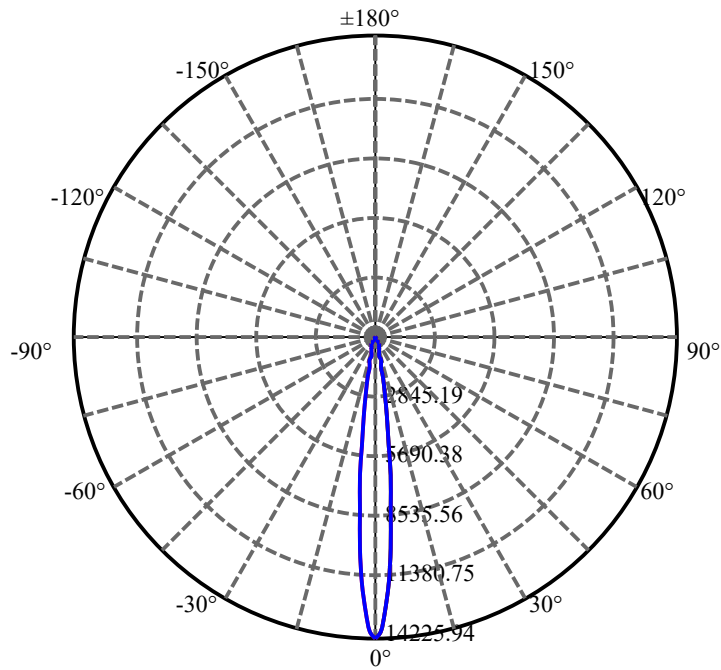
| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 76.0               | 4.939         | 0.524       | 1192.087  | .039%       | 99.382%    |
| 77.0               | 4.932         | 0.526       | 1192.613  | .040%       | 99.426%    |
| 78.0               | 4.904         | 0.527       | 1193.14   | .040%       | 99.470%    |
| 79.0               | 4.904         | 0.527       | 1193.667  | .040%       | 99.514%    |
| 80.0               | 4.890         | 0.528       | 1194.195  | .040%       | 99.558%    |
| 81.0               | 4.897         | 0.529       | 1194.724  | .040%       | 99.602%    |
| 82.0               | 4.911         | 0.532       | 1195.256  | .040%       | 99.646%    |
| 83.0               | 4.876         | 0.532       | 1195.788  | .040%       | 99.690%    |
| 84.0               | 4.870         | 0.531       | 1196.319  | .040%       | 99.735%    |
| 85.0               | 4.883         | 0.532       | 1196.851  | .040%       | 99.779%    |
| 86.0               | 4.856         | 0.532       | 1197.384  | .040%       | 99.823%    |
| 87.0               | 4.835         | 0.530       | 1197.914  | .040%       | 99.868%    |
| 88.0               | 4.821         | 0.529       | 1198.443  | .040%       | 99.912%    |
| 89.0               | 4.828         | 0.529       | 1198.972  | .040%       | 99.956%    |
| 90.0               | 4.821         | 0.529       | 1199.501  | .040%       | 100.000%   |

## ZONAL LUMEN SUMMARY

| Zone    | Lumens  | %Lamp  | %Fixt   |
|---------|---------|--------|---------|
| 0-30    | 1013.11 | 76.17% | 84.46%  |
| 0-40    | 1171.75 | 88.10% | 97.69%  |
| 0-60    | 1183.89 | 89.01% | 98.70%  |
| 0-90    | 1198.97 | 90.15% | 99.96%  |
| 0-120   | 1198.97 | 90.15% | 99.96%  |
| 0-180   | 1199.50 | 90.19% | 100.00% |
| 60-90   | 15.58   | 1.17%  | 1.30%   |
| 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%   |
| 0-27.68 | 959.60  | 72.15% | 80.00%  |

## ZONAL LUMEN SUMMARY

|         |        |
|---------|--------|
| 0-10    | 572.58 |
| 10-20   | 224.24 |
| 20-30   | 216.28 |
| 30-40   | 158.64 |
| 40-50   | 7.13   |
| 50-60   | 5.01   |
| 60-70   | 5.07   |
| 70-80   | 5.23   |
| 80-90   | 4.78   |
| 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: —————

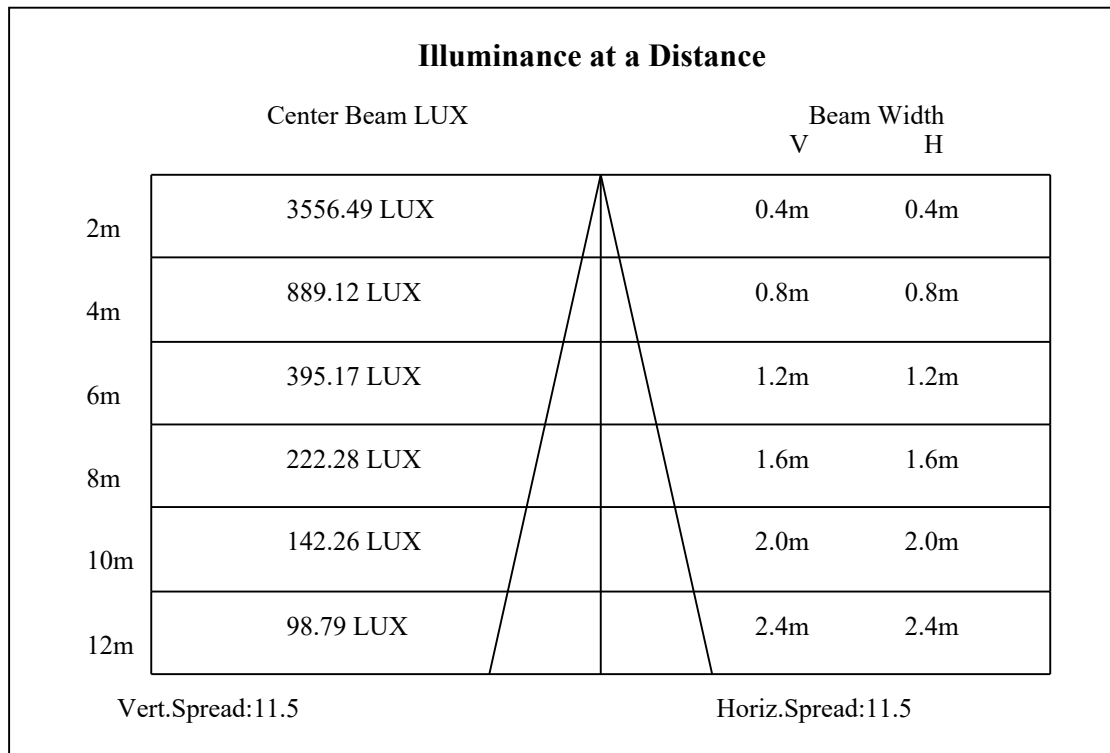
C90/C270: —————

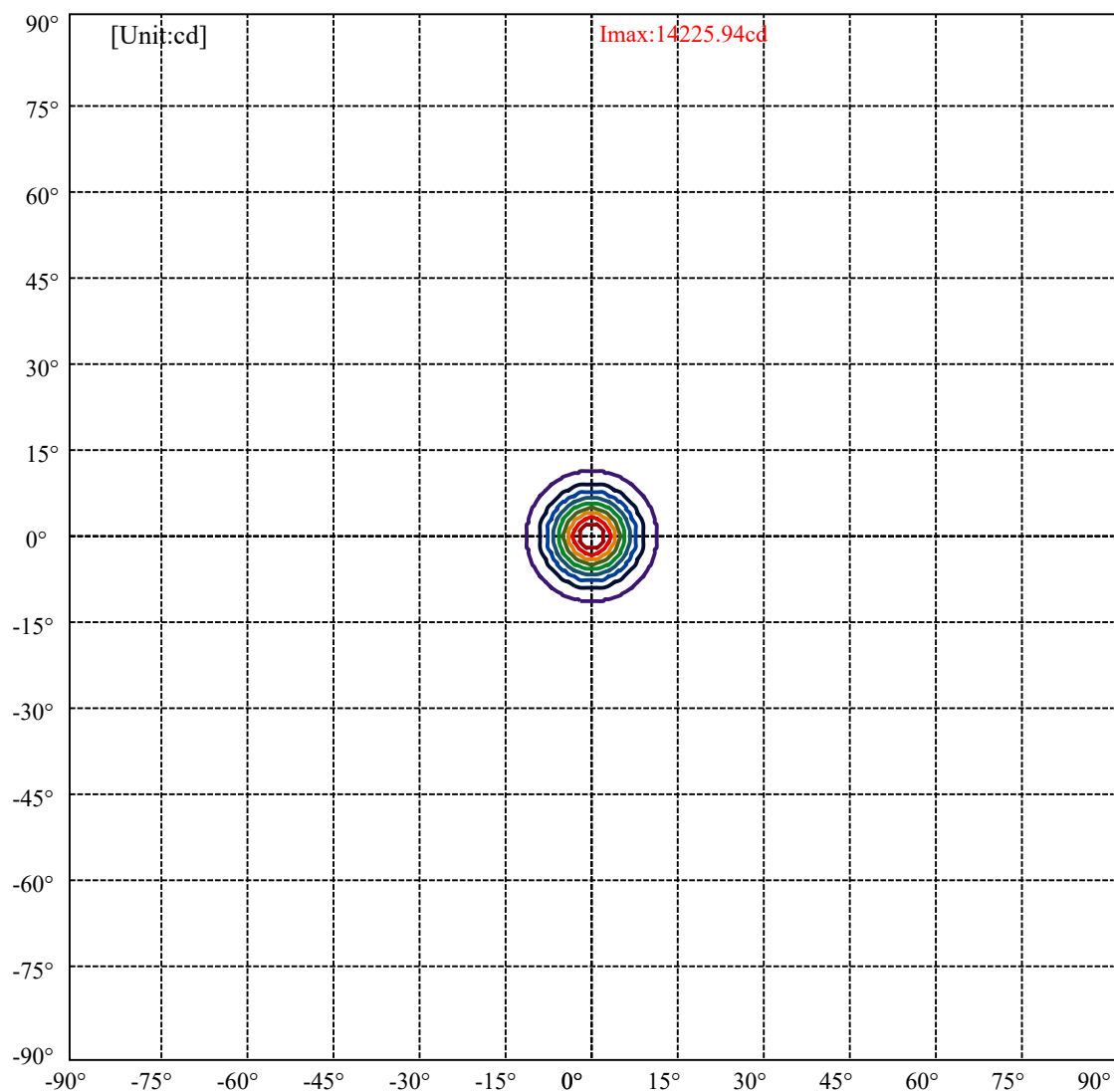
Field angle(10%Imax):C0/180Left:11.2 Right:11.2

:C90/270Left:11.2 Right:11.2

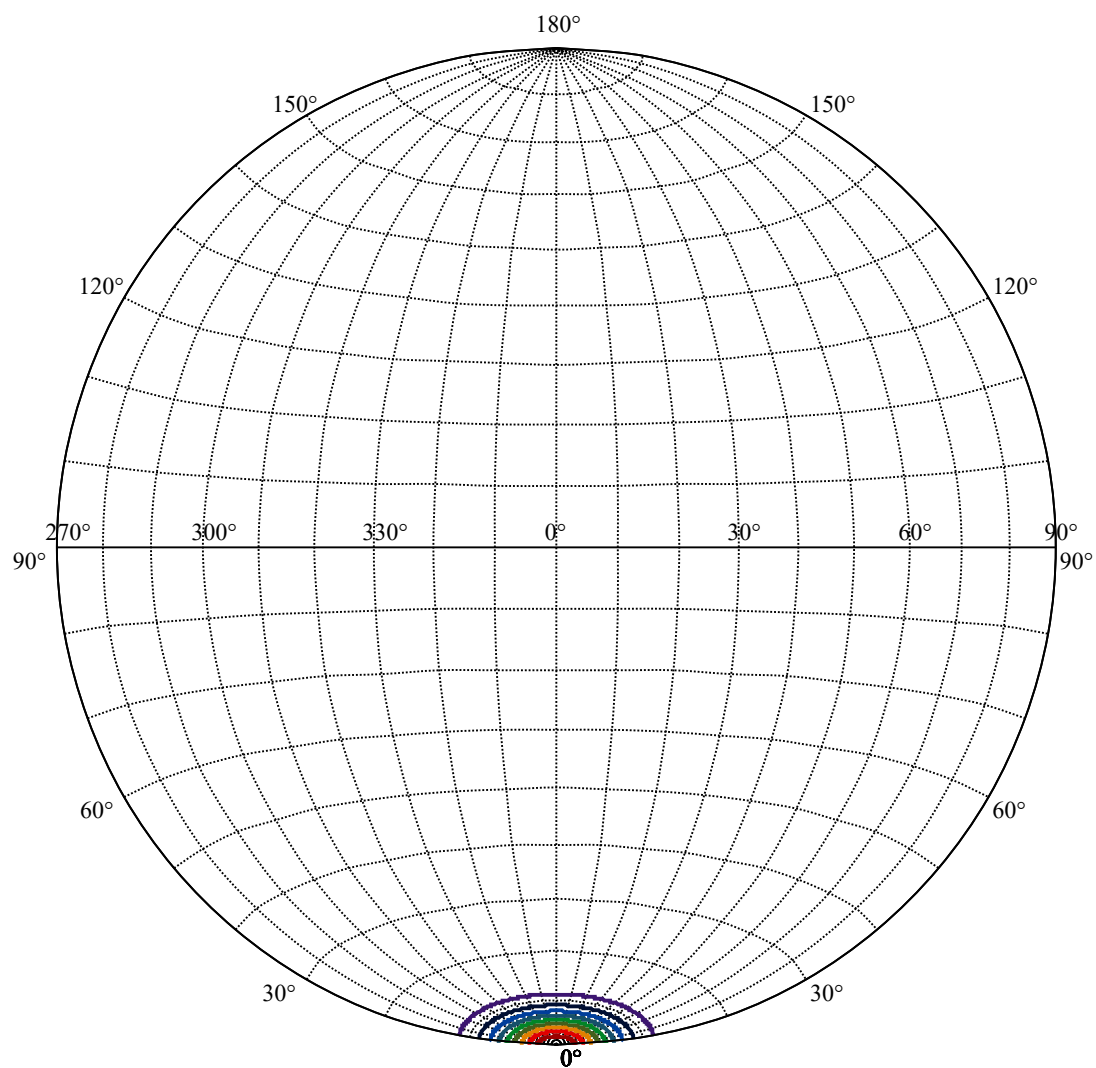
Beam Angle(50%Imax):C0/180Left:5.7 Right:5.7

:C90/270Left:5.7 Right:5.7





|           |         |             |
|-----------|---------|-------------|
| (10%Imax) | 1422.59 | <div></div> |
| (20%Imax) | 2845.19 | <div></div> |
| (30%Imax) | 4267.78 | <div></div> |
| (40%Imax) | 5690.38 | <div></div> |
| (50%Imax) | 7112.97 | <div></div> |
| (60%Imax) | 8535.56 | <div></div> |
| (70%Imax) | 9958.16 | <div></div> |
| (80%Imax) | 11380.8 | <div></div> |
| (90%Imax) | 12803.3 | <div></div> |



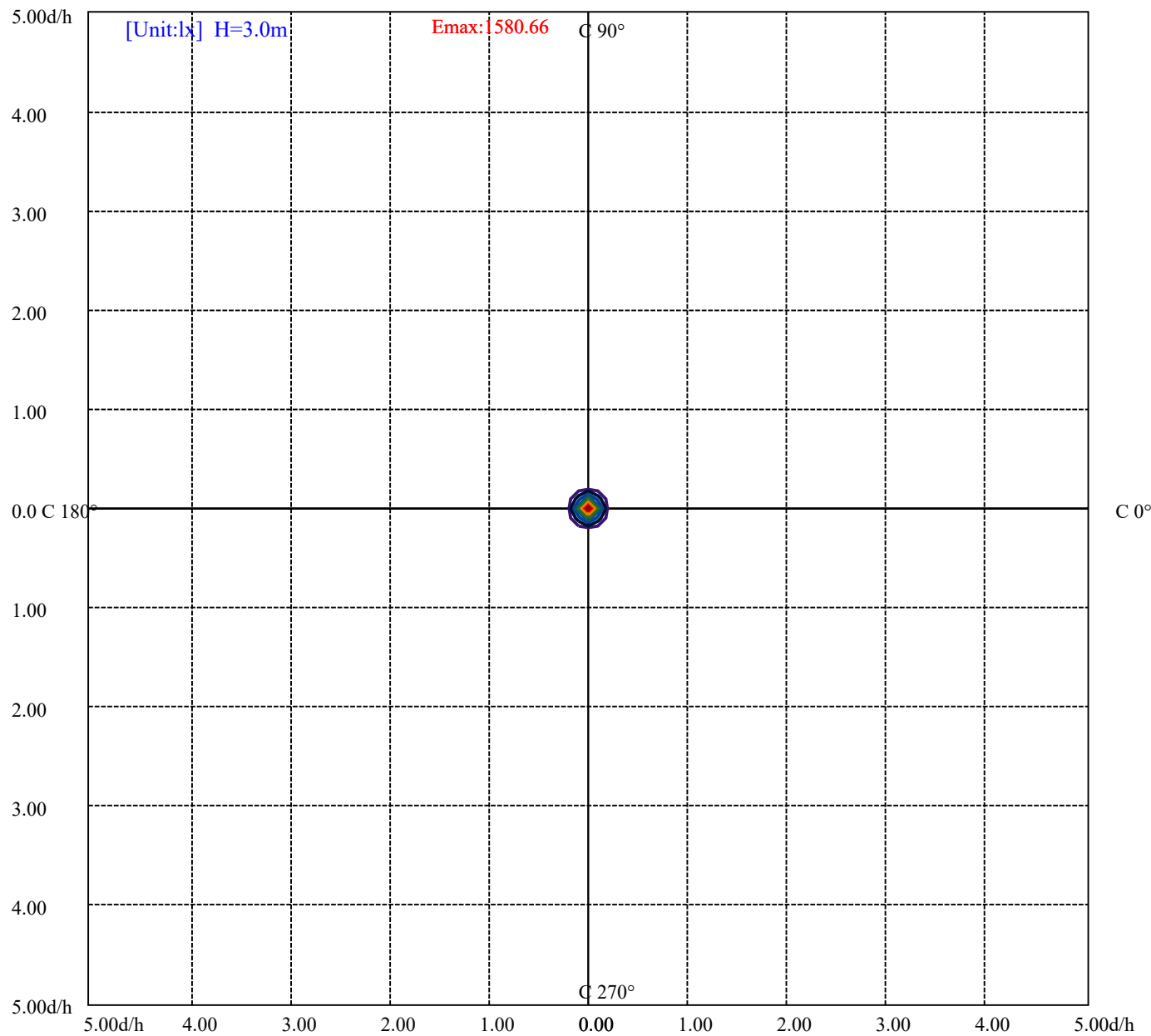
House

[Unit:cd]

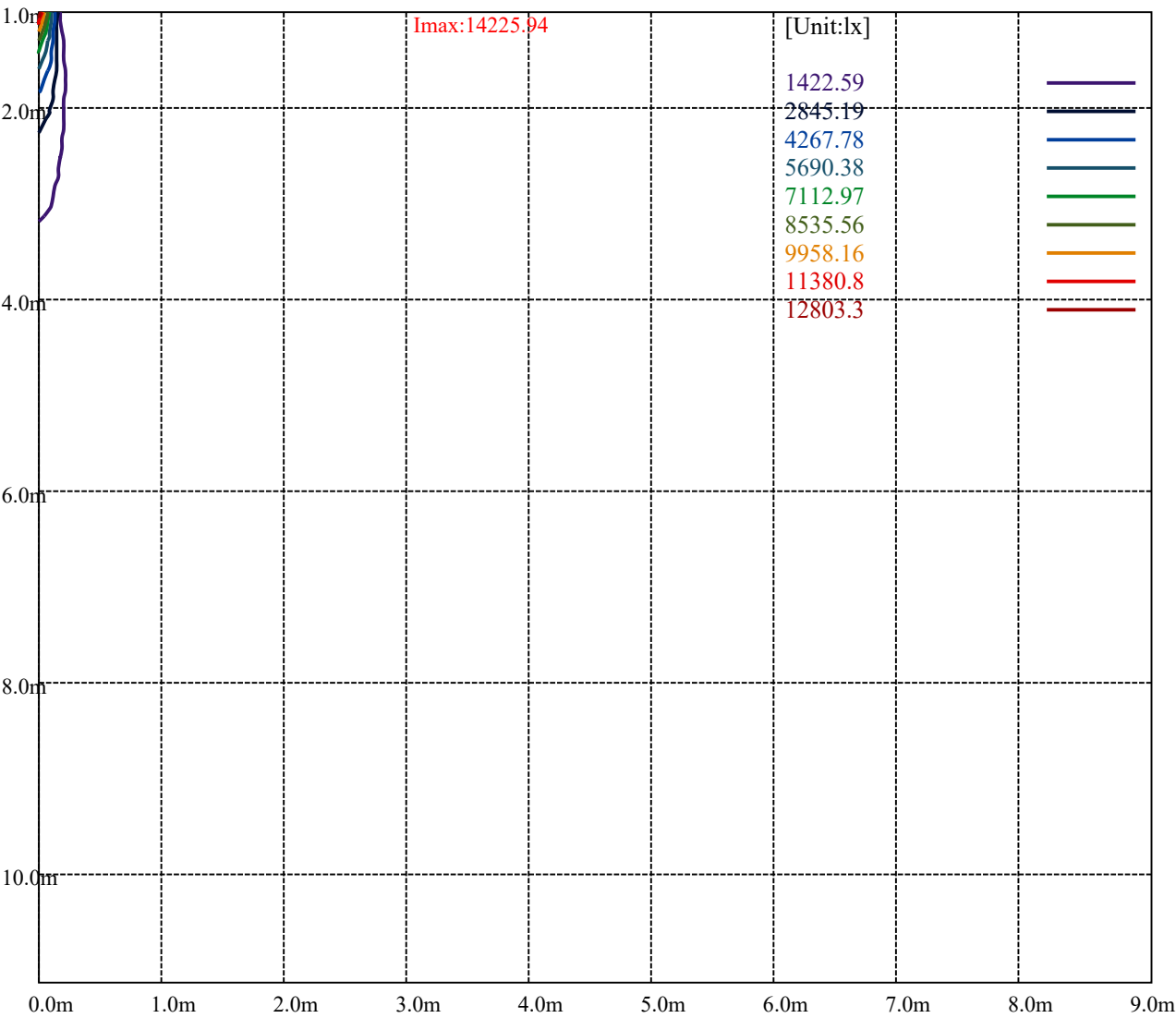
Road

Imax:14225.94

|           |         |   |
|-----------|---------|---|
| (10%Imax) | 1422.59 | — |
| (20%Imax) | 2845.19 | — |
| (30%Imax) | 4267.78 | — |
| (40%Imax) | 5690.38 | — |
| (50%Imax) | 7112.97 | — |
| (60%Imax) | 8535.56 | — |
| (70%Imax) | 9958.16 | — |
| (80%Imax) | 11380.8 | — |
| (90%Imax) | 12803.3 | — |



|           |          |   |
|-----------|----------|---|
| (10%Emax) | 158.0656 | — |
| (20%Emax) | 316.1311 | — |
| (30%Emax) | 474.1955 | — |
| (40%Emax) | 632.2611 | — |
| (50%Emax) | 790.3267 | — |
| (60%Emax) | 948.3923 | — |
| (70%Emax) | 1106.458 | — |
| (80%Emax) | 1264.522 | — |
| (90%Emax) | 1422.589 | — |



Luminance Table

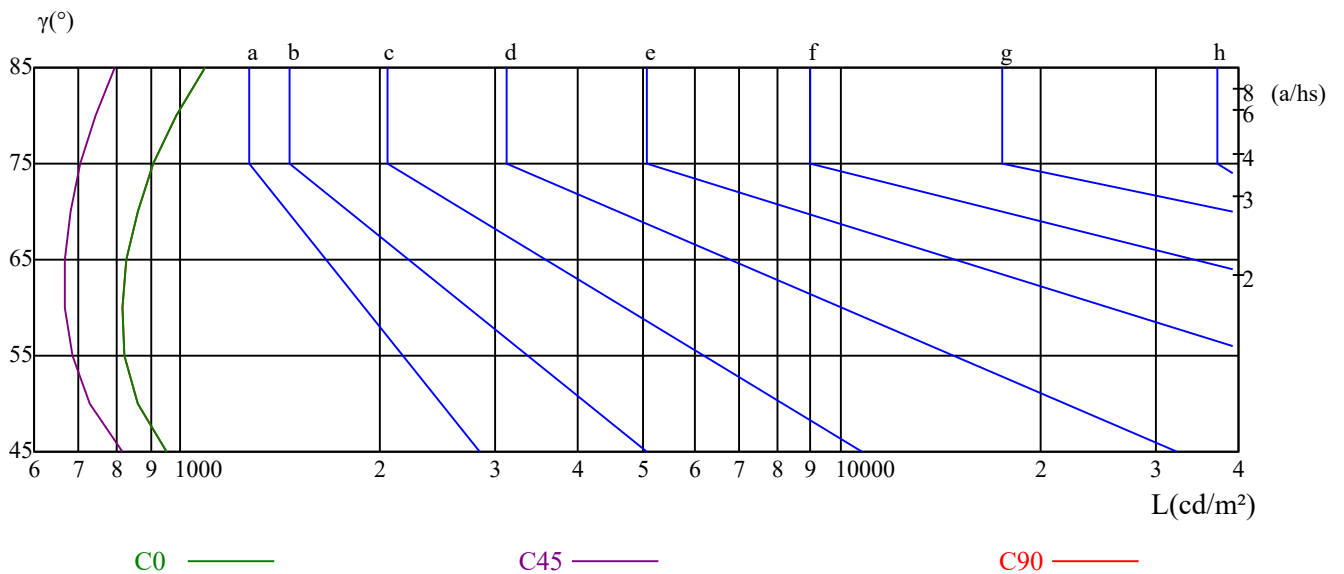
| $\gamma$ | 45  | 50  | 55  | 60  | 65  | 70  | 75  | 80  | 85   |
|----------|-----|-----|-----|-----|-----|-----|-----|-----|------|
| C0       | 951 | 862 | 824 | 814 | 827 | 861 | 912 | 983 | 1087 |
| C45      | 817 | 729 | 686 | 667 | 666 | 680 | 705 | 741 | 796  |
| C90      | 951 | 862 | 824 | 814 | 827 | 861 | 912 | 983 | 1087 |

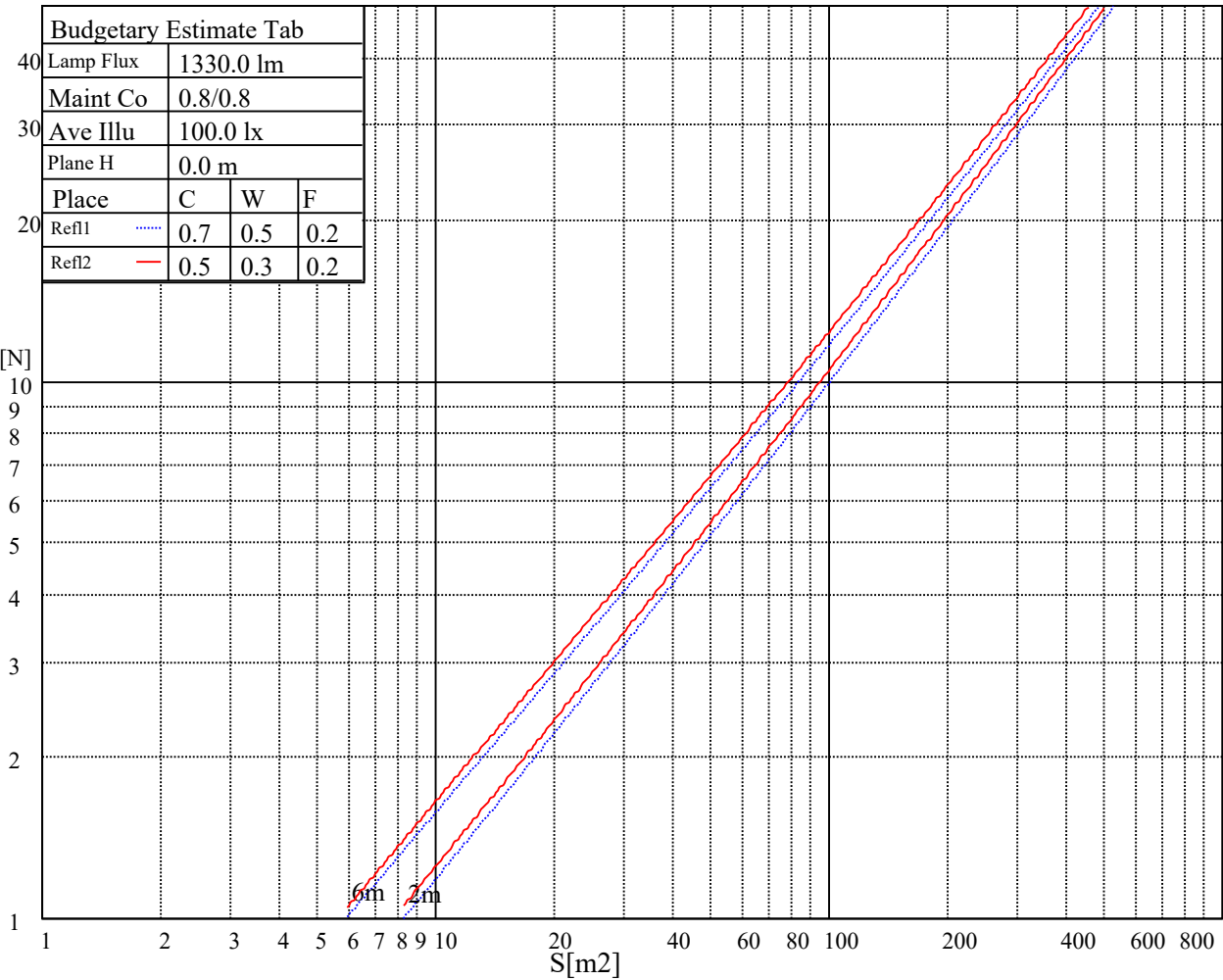
| L(Hor)(65) | L(Ver)(65) | L45(65) | L(Hor)(75) | L(Ver)(75) | L45(75) | L(Hor)(85) | L(Ver)(85) | L45(85) |
|------------|------------|---------|------------|------------|---------|------------|------------|---------|
| 1986       | 1986       | 1986    | 3137       | 3137       | 3137    | 9210       | 9210       | 9210    |

Glare Table

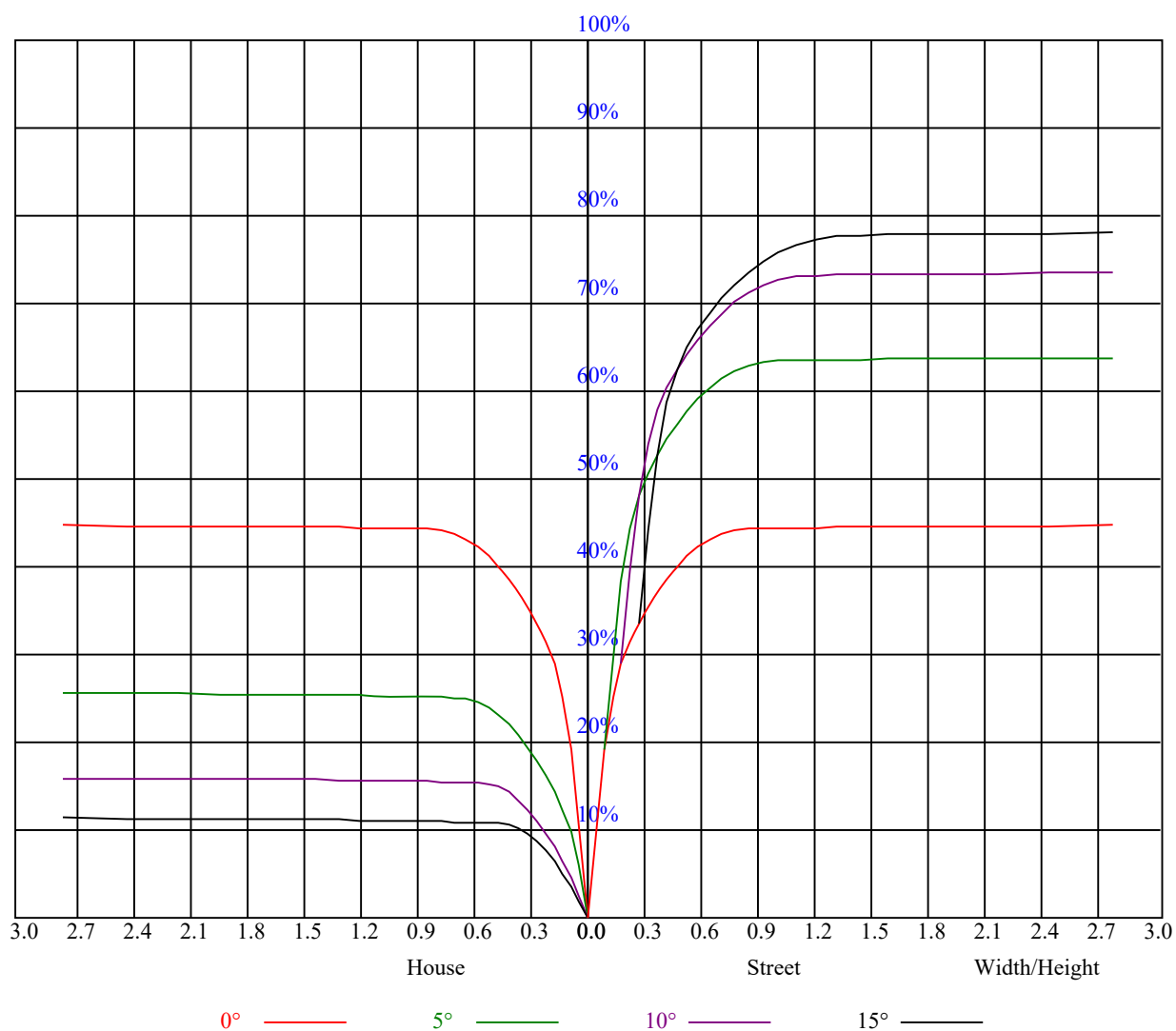
| Glare | Quality | Service Values Illuminance(lx) |      |      |            |            |            |            |            |
|-------|---------|--------------------------------|------|------|------------|------------|------------|------------|------------|
| 1.15  | A       | 2000                           | 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





| 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     | 1.07                                    | 1.07 | 1.07 | 1.05 | 1.05 | 1.05 | 1.00 | 1.00 | 1.00 | 0.96 | 0.96 | 0.96 | 0.92 | 0.92 | 0.92 | 0.90 |
| 1     | 1.01                                    | 1.00 | 0.98 | 0.99 | 0.98 | 0.96 | 0.96 | 0.95 | 0.93 | 0.93 | 0.92 | 0.91 | 0.90 | 0.89 | 0.88 | 0.87 |
| 2     | 0.96                                    | 0.93 | 0.91 | 0.95 | 0.92 | 0.90 | 0.92 | 0.90 | 0.88 | 0.89 | 0.88 | 0.86 | 0.87 | 0.86 | 0.85 | 0.83 |
| 3     | 0.92                                    | 0.89 | 0.86 | 0.91 | 0.88 | 0.85 | 0.89 | 0.86 | 0.84 | 0.87 | 0.84 | 0.83 | 0.85 | 0.83 | 0.81 | 0.80 |
| 4     | 0.88                                    | 0.84 | 0.82 | 0.87 | 0.84 | 0.81 | 0.85 | 0.83 | 0.80 | 0.84 | 0.81 | 0.79 | 0.82 | 0.80 | 0.78 | 0.77 |
| 5     | 0.85                                    | 0.81 | 0.78 | 0.84 | 0.81 | 0.78 | 0.83 | 0.80 | 0.77 | 0.81 | 0.79 | 0.77 | 0.80 | 0.78 | 0.76 | 0.75 |
| 6     | 0.82                                    | 0.78 | 0.75 | 0.81 | 0.78 | 0.75 | 0.80 | 0.77 | 0.74 | 0.79 | 0.76 | 0.74 | 0.78 | 0.75 | 0.74 | 0.73 |
| 7     | 0.79                                    | 0.75 | 0.73 | 0.79 | 0.75 | 0.72 | 0.78 | 0.74 | 0.72 | 0.77 | 0.74 | 0.72 | 0.76 | 0.73 | 0.71 | 0.70 |
| 8     | 0.77                                    | 0.73 | 0.70 | 0.76 | 0.73 | 0.70 | 0.76 | 0.72 | 0.70 | 0.75 | 0.72 | 0.70 | 0.74 | 0.71 | 0.69 | 0.69 |
| 9     | 0.75                                    | 0.71 | 0.68 | 0.74 | 0.71 | 0.68 | 0.74 | 0.70 | 0.68 | 0.73 | 0.70 | 0.68 | 0.72 | 0.70 | 0.68 | 0.67 |
| 10    | 0.73                                    | 0.69 | 0.67 | 0.72 | 0.69 | 0.66 | 0.72 | 0.68 | 0.66 | 0.71 | 0.68 | 0.66 | 0.71 | 0.68 | 0.66 | 0.65 |



## Intensity data(cd)

| C/γ(°) | 0.0      | 1.0      | 2.0      | 3.0      | 4.0      | 5.0      | 6.0      | 7.0     | 8.0     |
|--------|----------|----------|----------|----------|----------|----------|----------|---------|---------|
| 0.0    | 15471.14 | 14569.59 | 12649.61 | 10796.41 | 8915.39  | 6711.58  | 5125.51  | 3762.05 | 2910.58 |
| 45.0   | 13473.25 | 11748.05 | 9421.82  | 7624.27  | 5999.24  | 4212.83  | 2994.06  | 2860.49 | 1527.08 |
| 90.0   | 13350.82 | 10944.44 | 10303.34 | 8171.32  | 6560.21  | 5054.28  | 3554.47  | 2414.72 | 1747.46 |
| 135.0  | 14608.55 | 14413.76 | 13261.78 | 11853.79 | 10223.20 | 8102.87  | 6438.89  | 4919.60 | 3472.66 |
| 180.0  | 15471.14 | 15727.14 | 15137.24 | 13712.55 | 10886.01 | 9708.42  | 8098.98  | 6143.38 | 4235.64 |
| 225.0  | 13473.25 | 14870.11 | 15665.93 | 15565.75 | 14719.85 | 13350.82 | 11103.05 | 9251.52 | 7470.67 |
| 270.0  | 13350.82 | 14280.20 | 14608.55 | 14135.51 | 13033.60 | 11119.19 | 9388.42  | 7702.18 | 5932.46 |
| 315.0  | 14608.55 | 14135.51 | 12877.78 | 10941.10 | 9448.53  | 7557.49  | 5948.04  | 4368.65 | 3055.27 |
| 360.0  | 15471.14 | 14569.59 | 12649.61 | 10796.41 | 8915.39  | 6711.58  | 5125.51  | 3762.05 | 2910.58 |
| C/γ(°) | 9.0      | 10.0     | 11.0     | 12.0     | 13.0     | 14.0     | 15.0     | 16.0    | 17.0    |
| 0.0    | 1779.18  | 1366.25  | 1071.29  | 898.77   | 767.44   | 681.18   | 629.98   | 591.58  | 564.86  |
| 45.0   | 1166.46  | 953.87   | 796.37   | 704.55   | 637.21   | 592.69   | 569.87   | 550.95  | 535.92  |
| 90.0   | 1102.57  | 1025.21  | 865.88   | 744.23   | 674.44   | 621.46   | 584.12   | 560.08  | 541.60  |
| 135.0  | 2927.27  | 1695.15  | 1251.05  | 1016.20  | 837.00   | 722.36   | 654.46   | 599.92  | 568.76  |
| 180.0  | 3118.16  | 2078.59  | 1418.56  | 1090.77  | 942.46   | 790.53   | 691.75   | 634.82  | 593.91  |
| 225.0  | 5602.45  | 3954.05  | 2777.57  | 1863.77  | 1257.17  | 1068.23  | 869.28   | 750.13  | 670.16  |
| 270.0  | 4357.52  | 3166.58  | 2910.58  | 1595.53  | 1201.52  | 954.98   | 811.96   | 705.11  | 634.98  |
| 315.0  | 2182.66  | 1564.37  | 1085.82  | 990.21   | 839.73   | 724.25   | 650.62   | 608.38  | 578.44  |
| 360.0  | 1779.18  | 1366.25  | 1071.29  | 898.77   | 767.44   | 681.18   | 629.98   | 591.58  | 564.86  |
| C/γ(°) | 18.0     | 19.0     | 20.0     | 21.0     | 22.0     | 23.0     | 24.0     | 25.0    | 26.0    |
| 0.0    | 549.84   | 533.70   | 518.12   | 508.66   | 498.08   | 486.95   | 477.49   | 470.26  | 462.46  |
| 45.0   | 523.13   | 513.11   | 498.64   | 489.18   | 479.16   | 470.26   | 463.02   | 455.79  | 449.66  |
| 90.0   | 524.18   | 515.00   | 503.76   | 490.85   | 481.50   | 472.32   | 464.02   | 455.73  | 447.33  |
| 135.0  | 548.72   | 532.03   | 516.45   | 502.53   | 490.85   | 476.93   | 467.47   | 458.57  | 450.22  |
| 180.0  | 560.30   | 539.82   | 526.69   | 509.77   | 498.25   | 486.12   | 474.10   | 464.64  | 457.07  |
| 225.0  | 606.38   | 575.88   | 550.62   | 531.53   | 515.39   | 501.70   | 488.84   | 476.82  | 467.31  |
| 270.0  | 594.36   | 567.65   | 543.72   | 529.80   | 516.45   | 504.76   | 492.52   | 481.94  | 471.93  |
| 315.0  | 553.46   | 540.10   | 528.80   | 514.00   | 505.37   | 495.30   | 484.34   | 474.10  | 466.86  |
| 360.0  | 549.84   | 533.70   | 518.12   | 508.66   | 498.08   | 486.95   | 477.49   | 470.26  | 462.46  |
| C/γ(°) | 27.0     | 28.0     | 29.0     | 30.0     | 31.0     | 32.0     | 33.0     | 34.0    | 35.0    |
| 0.0    | 454.67   | 449.11   | 439.65   | 432.41   | 425.73   | 416.83   | 404.59   | 353.39  | 283.82  |
| 45.0   | 439.09   | 431.30   | 424.62   | 416.27   | 402.92   | 354.50   | 288.28   | 200.40  | 118.70  |
| 90.0   | 439.48   | 429.91   | 421.78   | 413.49   | 404.48   | 375.82   | 311.93   | 240.80  | 167.34  |
| 135.0  | 442.99   | 435.75   | 427.40   | 418.50   | 410.71   | 402.36   | 394.57   | 357.84  | 288.83  |
| 180.0  | 449.39   | 441.32   | 434.47   | 425.62   | 418.33   | 411.04   | 403.92   | 395.40  | 362.46  |
| 225.0  | 458.12   | 450.89   | 444.16   | 435.86   | 430.41   | 421.34   | 413.55   | 409.04  | 400.75  |
| 270.0  | 462.46   | 455.79   | 447.44   | 440.76   | 430.19   | 421.28   | 415.16   | 407.37  | 396.24  |
| 315.0  | 459.52   | 452.89   | 440.82   | 431.36   | 424.12   | 416.33   | 405.87   | 370.31  | 308.42  |
| 360.0  | 454.67   | 449.11   | 439.65   | 432.41   | 425.73   | 416.83   | 404.59   | 353.39  | 283.82  |
| C/γ(°) | 36.0     | 37.0     | 38.0     | 39.0     | 40.0     | 41.0     | 42.0     | 43.0    | 44.0    |
| 0.0    | 196.17   | 122.04   | 59.21    | 18.25    | 13.52    | 9.41     | 7.29     | 6.73    | 6.62    |
| 45.0   | 60.10    | 23.37    | 13.91    | 9.85     | 7.68     | 7.01     | 6.90     | 6.79    | 6.68    |
| 90.0   | 84.09    | 36.06    | 16.75    | 11.85    | 8.51     | 7.90     | 6.85     | 6.68    | 6.57    |
| 135.0  | 248.32   | 144.25   | 72.68    | 27.44    | 15.75    | 12.02    | 7.62     | 6.90    | 6.68    |
| 180.0  | 287.11   | 214.59   | 141.13   | 61.61    | 23.93    | 15.08    | 10.85    | 8.24    | 7.12    |
| 225.0  | 383.44   | 342.20   | 277.03   | 173.47   | 110.91   | 52.76    | 19.26    | 14.25   | 10.18   |
| 270.0  | 356.17   | 294.40   | 198.18   | 123.16   | 61.83    | 24.21    | 14.75    | 10.30   | 7.68    |
| 315.0  | 216.04   | 140.69   | 74.52    | 23.60    | 15.19    | 10.91    | 7.85     | 7.40    | 6.68    |
| 360.0  | 196.17   | 122.04   | 59.21    | 18.25    | 13.52    | 9.41     | 7.29     | 6.73    | 6.62    |

## 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             | 6.46 | 6.34 | 6.23 | 6.07 | 5.90 | 5.79 | 5.73 | 5.68 | 5.62 |
| 45.0            | 6.46 | 6.34 | 6.29 | 6.12 | 6.12 | 6.07 | 5.95 | 5.84 | 5.73 |
| 90.0            | 6.40 | 6.29 | 6.18 | 6.12 | 6.01 | 5.90 | 5.79 | 5.68 | 5.62 |
| 135.0           | 6.51 | 6.40 | 6.34 | 6.12 | 6.01 | 5.95 | 5.90 | 5.79 | 5.73 |
| 180.0           | 6.51 | 6.40 | 6.23 | 6.12 | 6.07 | 5.95 | 5.84 | 5.79 | 5.73 |
| 225.0           | 8.18 | 7.07 | 6.68 | 6.51 | 6.34 | 6.23 | 6.18 | 6.01 | 5.90 |
| 270.0           | 7.12 | 6.90 | 6.73 | 6.51 | 6.34 | 6.23 | 6.18 | 6.07 | 5.95 |
| 315.0           | 6.51 | 6.34 | 6.18 | 6.01 | 5.90 | 5.84 | 5.79 | 5.68 | 5.57 |
| 360.0           | 6.46 | 6.34 | 6.23 | 6.07 | 5.90 | 5.79 | 5.73 | 5.68 | 5.62 |
| C/ $\gamma$ (°) | 54.0 | 55.0 | 56.0 | 57.0 | 58.0 | 59.0 | 60.0 | 61.0 | 62.0 |
| 0.0             | 5.45 | 5.40 | 5.29 | 5.29 | 5.23 | 5.18 | 5.12 | 5.06 | 5.01 |
| 45.0            | 5.62 | 5.57 | 5.45 | 5.40 | 5.34 | 5.23 | 5.23 | 5.18 | 5.18 |
| 90.0            | 5.62 | 5.57 | 5.51 | 5.40 | 5.34 | 5.34 | 5.29 | 5.29 | 5.23 |
| 135.0           | 5.62 | 5.57 | 5.51 | 5.40 | 5.40 | 5.34 | 5.34 | 5.29 | 5.29 |
| 180.0           | 5.57 | 5.51 | 5.45 | 5.40 | 5.40 | 5.29 | 5.29 | 5.18 | 5.18 |
| 225.0           | 5.79 | 5.68 | 5.62 | 5.57 | 5.51 | 5.45 | 5.40 | 5.29 | 5.23 |
| 270.0           | 5.84 | 5.79 | 5.62 | 5.57 | 5.51 | 5.45 | 5.45 | 5.40 | 5.34 |
| 315.0           | 5.45 | 5.40 | 5.34 | 5.34 | 5.29 | 5.23 | 5.12 | 5.18 | 5.12 |
| 360.0           | 5.45 | 5.40 | 5.29 | 5.29 | 5.23 | 5.18 | 5.12 | 5.06 | 5.01 |
| C/ $\gamma$ (°) | 63.0 | 64.0 | 65.0 | 66.0 | 67.0 | 68.0 | 69.0 | 70.0 | 71.0 |
| 0.0             | 5.01 | 5.06 | 5.06 | 4.95 | 4.90 | 4.90 | 4.95 | 4.95 | 4.90 |
| 45.0            | 5.12 | 5.06 | 5.06 | 5.06 | 5.06 | 5.01 | 4.95 | 4.95 | 4.95 |
| 90.0            | 5.18 | 5.23 | 5.12 | 5.12 | 5.06 | 5.06 | 5.06 | 5.06 | 5.06 |
| 135.0           | 5.18 | 5.12 | 5.12 | 5.06 | 5.18 | 5.12 | 5.06 | 5.06 | 5.01 |
| 180.0           | 5.12 | 5.06 | 5.06 | 5.06 | 5.06 | 5.06 | 4.95 | 4.95 | 4.95 |
| 225.0           | 5.18 | 5.18 | 5.18 | 5.12 | 5.12 | 5.06 | 5.01 | 5.01 | 5.01 |
| 270.0           | 5.29 | 5.23 | 5.23 | 5.18 | 5.18 | 5.12 | 5.12 | 5.12 | 5.12 |
| 315.0           | 5.12 | 5.06 | 5.01 | 5.01 | 5.01 | 4.95 | 4.95 | 4.95 | 4.95 |
| 360.0           | 5.01 | 5.06 | 5.06 | 4.95 | 4.90 | 4.90 | 4.95 | 4.95 | 4.90 |
| C/ $\gamma$ (°) | 72.0 | 73.0 | 74.0 | 75.0 | 76.0 | 77.0 | 78.0 | 79.0 | 80.0 |
| 0.0             | 4.90 | 4.90 | 4.90 | 4.90 | 4.90 | 4.90 | 4.84 | 4.84 | 4.84 |
| 45.0            | 5.01 | 4.95 | 4.95 | 4.90 | 4.90 | 4.90 | 4.95 | 4.90 | 4.90 |
| 90.0            | 5.01 | 4.95 | 4.95 | 5.01 | 5.01 | 5.01 | 4.95 | 4.95 | 4.95 |
| 135.0           | 4.95 | 4.95 | 4.90 | 5.01 | 5.01 | 5.01 | 4.90 | 4.90 | 4.90 |
| 180.0           | 4.95 | 4.95 | 4.90 | 4.90 | 4.90 | 4.84 | 4.79 | 4.84 | 4.84 |
| 225.0           | 5.01 | 4.95 | 4.95 | 4.95 | 4.95 | 4.95 | 4.95 | 4.95 | 4.84 |
| 270.0           | 5.01 | 5.01 | 5.01 | 5.01 | 5.01 | 5.01 | 4.95 | 4.95 | 4.95 |
| 315.0           | 4.95 | 4.95 | 4.95 | 4.84 | 4.84 | 4.84 | 4.90 | 4.90 | 4.90 |
| 360.0           | 4.90 | 4.90 | 4.90 | 4.90 | 4.90 | 4.90 | 4.84 | 4.84 | 4.84 |
| C/ $\gamma$ (°) | 81.0 | 82.0 | 83.0 | 84.0 | 85.0 | 86.0 | 87.0 | 88.0 | 89.0 |
| 0.0             | 4.84 | 4.90 | 4.84 | 4.90 | 4.84 | 4.84 | 4.84 | 4.73 | 4.79 |
| 45.0            | 4.90 | 4.90 | 4.84 | 4.84 | 4.90 | 4.79 | 4.79 | 4.84 | 4.79 |
| 90.0            | 4.95 | 5.01 | 4.95 | 4.90 | 4.95 | 4.90 | 4.90 | 4.84 | 4.84 |
| 135.0           | 4.95 | 4.90 | 4.90 | 4.84 | 4.90 | 4.84 | 4.79 | 4.84 | 4.84 |
| 180.0           | 4.84 | 4.84 | 4.79 | 4.79 | 4.84 | 4.84 | 4.84 | 4.79 | 4.79 |
| 225.0           | 4.84 | 4.90 | 4.84 | 4.84 | 4.90 | 4.84 | 4.84 | 4.84 | 4.84 |
| 270.0           | 5.01 | 5.01 | 4.95 | 4.95 | 4.95 | 4.95 | 4.90 | 4.90 | 4.90 |
| 315.0           | 4.84 | 4.84 | 4.90 | 4.90 | 4.79 | 4.84 | 4.79 | 4.79 | 4.84 |
| 360.0           | 4.84 | 4.90 | 4.84 | 4.90 | 4.84 | 4.84 | 4.84 | 4.73 | 4.79 |

## Intensity data(cd)

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|                       |      |
|-----------------------|------|
| C/ $\gamma(^{\circ})$ | 90.0 |
| 0.0                   | 4.79 |
| 45.0                  | 4.79 |
| 90.0                  | 4.84 |
| 135.0                 | 4.84 |
| 180.0                 | 4.79 |
| 225.0                 | 4.84 |
| 270.0                 | 4.90 |
| 315.0                 | 4.79 |
| 360.0                 | 4.79 |