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## Nata

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|                         |                   |
|-------------------------|-------------------|
| LumCAT: 1496-S          |                   |
| Luminaire: 92.70.185.00 |                   |
| Report No: 220525-B007  | Voltage(V):       |
| Test No: 220525-C007    | Current(A):       |
| LampCAT: CREE CXA1507   | Power (W): 8.1620 |
| Lamp flux(lm): 915.1    | PF:               |
| Number of Lamps: 1      | Ballast type:     |
| Length(mm): 43          | Width(mm): 43     |
| Phm Type: C             | Height(mm): 0     |

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## Photometric Results

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Lumens(lm): 737.80  
Efficiency(%): 80.62%  
Lumens(lm)/Power(W): 90.39  
Central intensity(cd): 3040.676  
Maximum intensity(cd): 3040.676  
Angle of maximum intensity: C=0.0  $\gamma$ =0.0  
Beam Angle(50%Imax): [C0/180]Total=22.6  
                                  [C90/270]Total=22.6  
Field angle(10%Imax): [C0/180]Total=53.1  
                                  [C90/270]Total=53.1  
Maximum s/h(1/2): C0\_180=0.38 C90\_270=0.38  
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(%): 80.62%  
Up flux rate of LUM(%): - -  
Down flux rate of LUM(%): 100.00%  
CIE Type : Direct lighting  
Output flux ratio in  $\pi$  solid angle : 97.187%

| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 0.0                | 3040.676      | 0.000       | 0         | .000%       | .000%      |
| 1.0                | 3014.534      | 2.897       | 2.897     | .317%       | .393%      |
| 2.0                | 2957.470      | 8.572       | 11.469    | .937%       | 1.554%     |
| 3.0                | 2848.944      | 13.887      | 25.356    | 1.517%      | 3.437%     |
| 4.0                | 2710.242      | 18.608      | 43.964    | 2.033%      | 5.959%     |
| 5.0                | 2556.603      | 22.658      | 66.622    | 2.476%      | 9.030%     |
| 6.0                | 2377.195      | 25.928      | 92.55     | 2.833%      | 12.544%    |
| 7.0                | 2192.334      | 28.363      | 120.913   | 3.099%      | 16.388%    |
| 8.0                | 2034.810      | 30.253      | 151.166   | 3.306%      | 20.489%    |
| 9.0                | 1860.556      | 31.570      | 182.736   | 3.450%      | 24.768%    |
| 10.0               | 1696.011      | 32.186      | 214.922   | 3.517%      | 29.130%    |
| 11.0               | 1563.435      | 32.569      | 247.49    | 3.559%      | 33.544%    |
| 12.0               | 1413.365      | 32.541      | 280.031   | 3.556%      | 37.955%    |
| 13.0               | 1275.463      | 31.910      | 311.941   | 3.487%      | 42.280%    |
| 14.0               | 1167.609      | 31.271      | 343.212   | 3.417%      | 46.518%    |
| 15.0               | 1062.571      | 30.617      | 373.829   | 3.346%      | 50.668%    |
| 16.0               | 952.648       | 29.529      | 403.357   | 3.227%      | 54.670%    |
| 17.0               | 866.260       | 28.325      | 431.682   | 3.095%      | 58.509%    |
| 18.0               | 779.678       | 27.138      | 458.82    | 2.965%      | 62.188%    |
| 19.0               | 703.598       | 25.806      | 484.626   | 2.820%      | 65.685%    |
| 20.0               | 635.569       | 24.510      | 509.137   | 2.678%      | 69.007%    |
| 21.0               | 571.297       | 23.174      | 532.311   | 2.532%      | 72.148%    |
| 22.0               | 511.358       | 21.756      | 554.068   | 2.377%      | 75.097%    |
| 23.0               | 459.761       | 20.377      | 574.444   | 2.227%      | 77.859%    |
| 24.0               | 414.371       | 19.112      | 593.556   | 2.088%      | 80.449%    |
| 25.0               | 366.338       | 17.752      | 611.308   | 1.940%      | 82.855%    |
| 26.0               | 324.369       | 16.304      | 627.612   | 1.782%      | 85.065%    |
| 27.0               | 287.636       | 14.973      | 642.585   | 1.636%      | 87.095%    |
| 28.0               | 235.412       | 13.242      | 655.827   | 1.447%      | 88.889%    |
| 29.0               | 191.254       | 11.163      | 666.99    | 1.220%      | 90.402%    |
| 30.0               | 155.559       | 9.364       | 676.354   | 1.023%      | 91.672%    |
| 31.0               | 118.386       | 7.623       | 683.977   | .833%       | 92.705%    |
| 32.0               | 87.269        | 5.892       | 689.869   | .644%       | 93.503%    |
| 33.0               | 61.770        | 4.391       | 694.26    | .480%       | 94.098%    |
| 34.0               | 38.989        | 3.049       | 697.309   | .333%       | 94.512%    |
| 35.0               | 26.799        | 2.043       | 699.352   | .223%       | 94.789%    |
| 36.0               | 20.884        | 1.518       | 700.87    | .166%       | 94.994%    |
| 37.0               | 17.799        | 1.262       | 702.132   | .138%       | 95.165%    |

| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 38.0               | 14.087        | 1.064       | 703.196   | .116%       | 95.310%    |
| 39.0               | 10.001        | 0.822       | 704.018   | .090%       | 95.421%    |
| 40.0               | 8.634         | 0.650       | 704.668   | .071%       | 95.509%    |
| 41.0               | 8.044         | 0.594       | 705.262   | .065%       | 95.590%    |
| 42.0               | 7.551         | 0.567       | 705.829   | .062%       | 95.667%    |
| 43.0               | 7.140         | 0.544       | 706.373   | .059%       | 95.740%    |
| 44.0               | 6.872         | 0.529       | 706.902   | .058%       | 95.812%    |
| 45.0               | 6.700         | 0.522       | 707.423   | .057%       | 95.883%    |
| 46.0               | 6.633         | 0.521       | 707.945   | .057%       | 95.953%    |
| 47.0               | 6.640         | 0.528       | 708.473   | .058%       | 96.025%    |
| 48.0               | 6.737         | 0.541       | 709.014   | .059%       | 96.098%    |
| 49.0               | 6.842         | 0.558       | 709.571   | .061%       | 96.174%    |
| 50.0               | 6.924         | 0.574       | 710.145   | .063%       | 96.252%    |
| 51.0               | 6.939         | 0.587       | 710.732   | .064%       | 96.331%    |
| 52.0               | 7.058         | 0.601       | 711.332   | .066%       | 96.412%    |
| 53.0               | 7.148         | 0.618       | 711.95    | .068%       | 96.496%    |
| 54.0               | 7.282         | 0.636       | 712.586   | .070%       | 96.582%    |
| 55.0               | 7.552         | 0.662       | 713.248   | .072%       | 96.672%    |
| 56.0               | 7.925         | 0.699       | 713.948   | .076%       | 96.767%    |
| 57.0               | 8.134         | 0.734       | 714.682   | .080%       | 96.866%    |
| 58.0               | 8.388         | 0.764       | 715.446   | .083%       | 96.970%    |
| 59.0               | 8.552         | 0.792       | 716.238   | .087%       | 97.077%    |
| 60.0               | 8.575         | 0.809       | 717.047   | .088%       | 97.187%    |
| 61.0               | 8.530         | 0.816       | 717.863   | .089%       | 97.298%    |
| 62.0               | 8.403         | 0.816       | 718.679   | .089%       | 97.408%    |
| 63.0               | 8.403         | 0.817       | 719.497   | .089%       | 97.519%    |
| 64.0               | 8.455         | 0.827       | 720.324   | .090%       | 97.631%    |
| 65.0               | 8.470         | 0.838       | 721.161   | .092%       | 97.745%    |
| 66.0               | 8.433         | 0.843       | 722.005   | .092%       | 97.859%    |
| 67.0               | 8.194         | 0.836       | 722.841   | .091%       | 97.972%    |
| 68.0               | 8.059         | 0.823       | 723.664   | .090%       | 98.084%    |
| 69.0               | 7.925         | 0.815       | 724.479   | .089%       | 98.194%    |
| 70.0               | 7.761         | 0.806       | 725.285   | .088%       | 98.304%    |
| 71.0               | 7.596         | 0.794       | 726.079   | .087%       | 98.411%    |
| 72.0               | 7.394         | 0.779       | 726.858   | .085%       | 98.517%    |
| 73.0               | 7.238         | 0.765       | 727.623   | .084%       | 98.621%    |
| 74.0               | 7.148         | 0.756       | 728.38    | .083%       | 98.723%    |
| 75.0               | 6.946         | 0.745       | 729.124   | .081%       | 98.824%    |

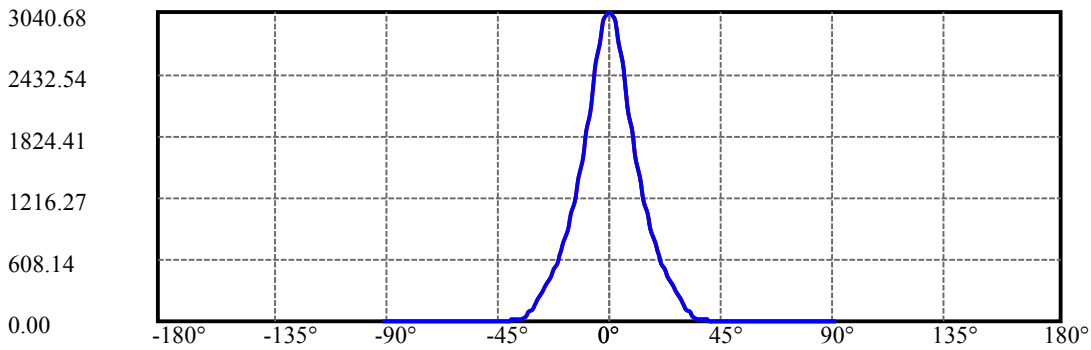
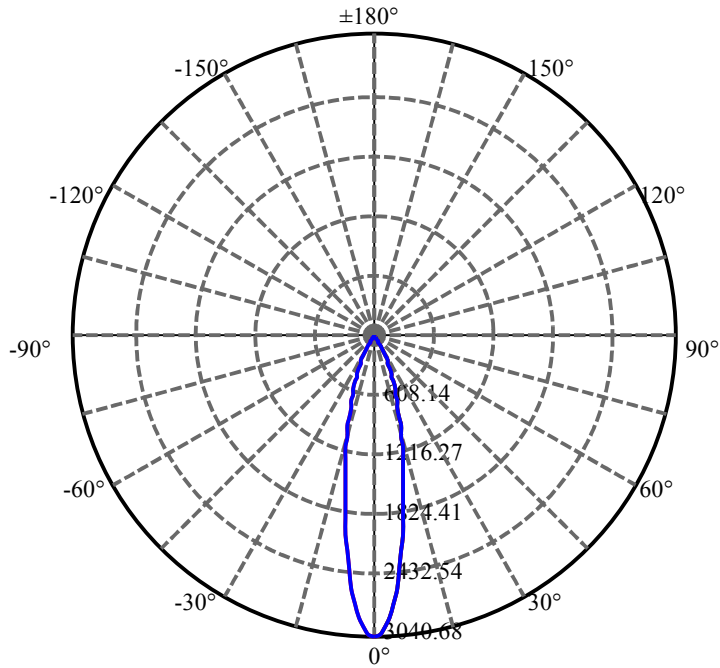
| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 76.0               | 6.782         | 0.729       | 729.853   | .080%       | 98.923%    |
| 77.0               | 6.625         | 0.715       | 730.568   | .078%       | 99.020%    |
| 78.0               | 6.491         | 0.702       | 731.27    | .077%       | 99.115%    |
| 79.0               | 6.304         | 0.687       | 731.957   | .075%       | 99.208%    |
| 80.0               | 6.132         | 0.670       | 732.628   | .073%       | 99.299%    |
| 81.0               | 5.983         | 0.655       | 733.283   | .072%       | 99.388%    |
| 82.0               | 5.818         | 0.640       | 733.923   | .070%       | 99.474%    |
| 83.0               | 5.714         | 0.627       | 734.55    | .069%       | 99.559%    |
| 84.0               | 5.535         | 0.613       | 735.163   | .067%       | 99.642%    |
| 85.0               | 4.863         | 0.567       | 735.73    | .062%       | 99.719%    |
| 86.0               | 4.586         | 0.516       | 736.247   | .056%       | 99.789%    |
| 87.0               | 3.727         | 0.455       | 736.702   | .050%       | 99.851%    |
| 88.0               | 3.309         | 0.385       | 737.087   | .042%       | 99.903%    |
| 89.0               | 3.249         | 0.359       | 737.446   | .039%       | 99.952%    |
| 90.0               | 3.219         | 0.355       | 737.801   | .039%       | 100.000%   |

ZONAL LUMEN SUMMARY

| Zone    | Lumens | %Lamp  | %Fixt   |
|---------|--------|--------|---------|
| 0-30    | 676.35 | 73.91% | 91.67%  |
| 0-40    | 704.67 | 77.00% | 95.51%  |
| 0-60    | 717.05 | 78.35% | 97.19%  |
| 0-90    | 737.45 | 80.58% | 99.95%  |
| 0-120   | 737.45 | 80.58% | 99.95%  |
| 0-180   | 737.80 | 80.62% | 100.00% |
| 60-90   | 21.21  | 2.32%  | 2.87%   |
| 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%   |
| 0-23.83 | 590.24 | 64.50% | 80.00%  |

ZONAL LUMEN SUMMARY

|         |        |
|---------|--------|
| 0-10    | 214.92 |
| 10-20   | 294.22 |
| 20-30   | 167.22 |
| 30-40   | 28.31  |
| 40-50   | 5.48   |
| 50-60   | 6.90   |
| 60-70   | 8.24   |
| 70-80   | 7.34   |
| 80-90   | 4.82   |
| 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: —————

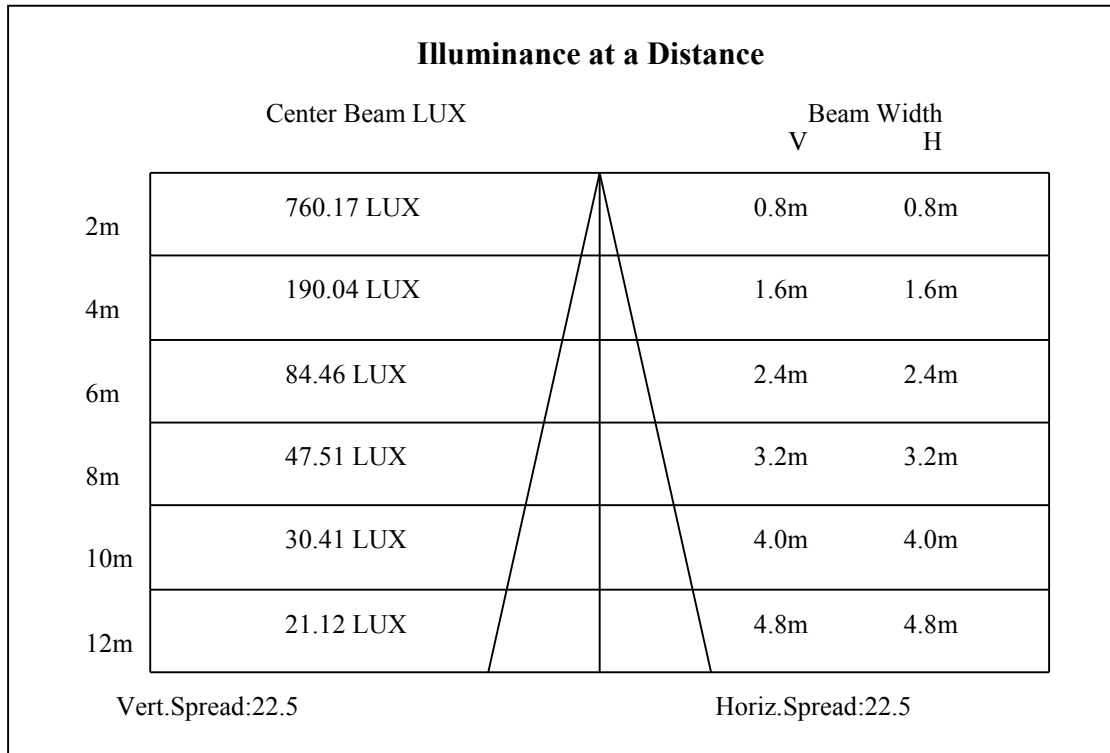
C90/C270: —————

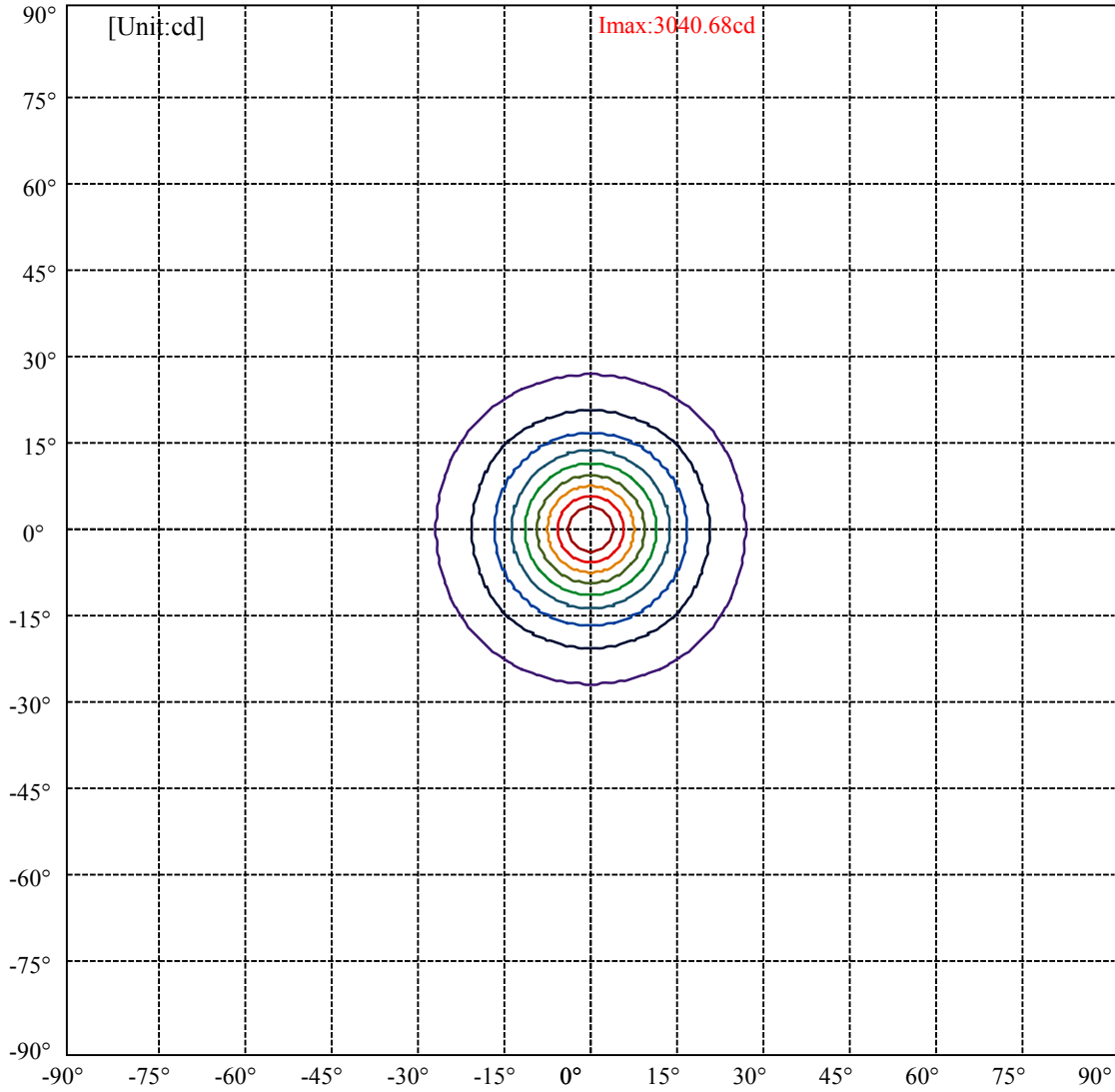
Field angle(10%Imax):C0/180Left:26.6 Right:26.6

:C90/270Left:26.6 Right:26.6

Beam Angle(50%Imax):C0/180Left:11.3 Right:11.3

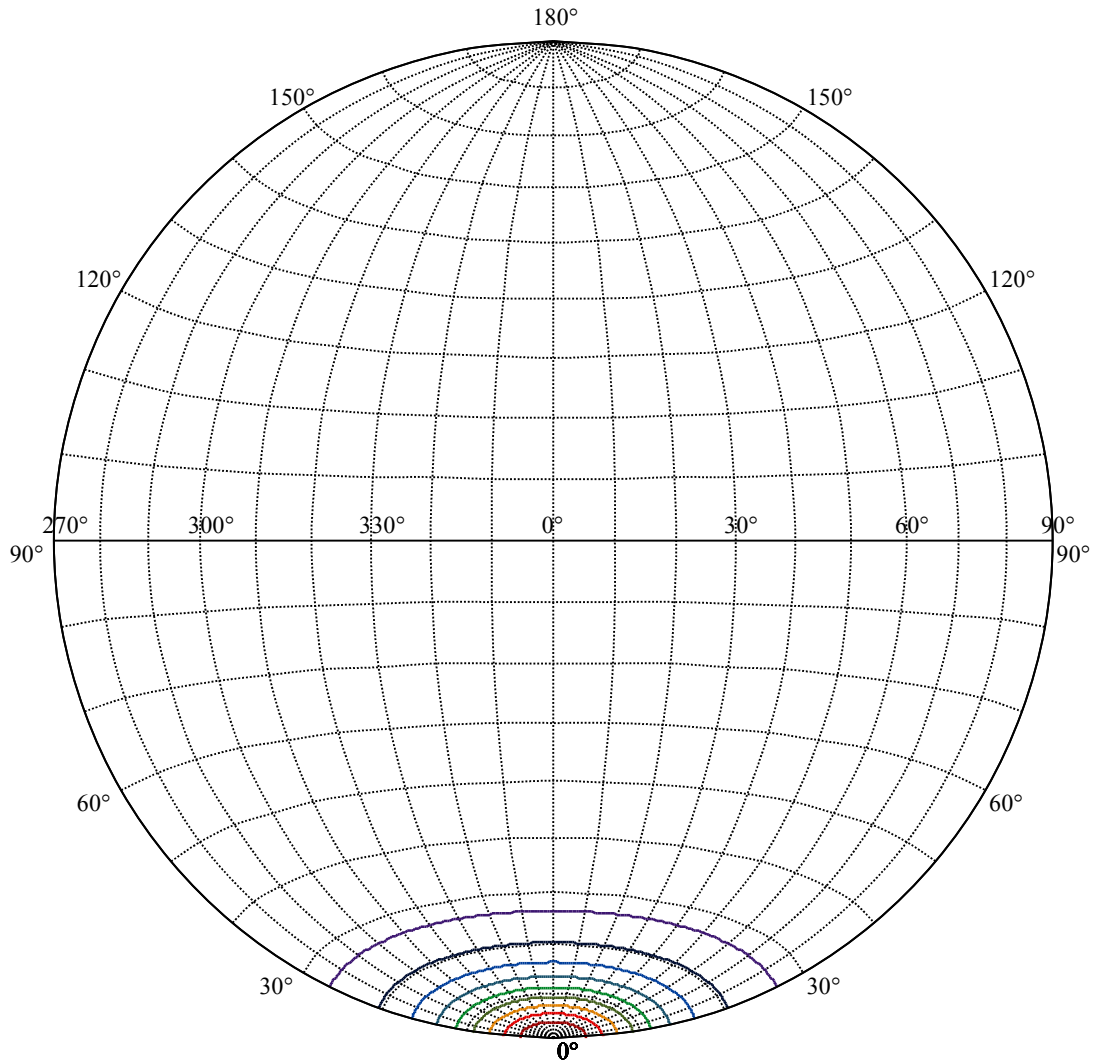
:C90/270Left:11.3 Right:11.3





|                   |   |
|-------------------|---|
| (10%Imax) 304.068 | — |
| (20%Imax) 608.135 | — |
| (30%Imax) 912.203 | — |
| (40%Imax) 1216.27 | — |
| (50%Imax) 1520.34 | — |
| (60%Imax) 1824.41 | — |
| (70%Imax) 2128.47 | — |
| (80%Imax) 2432.54 | — |
| (90%Imax) 2736.61 | — |





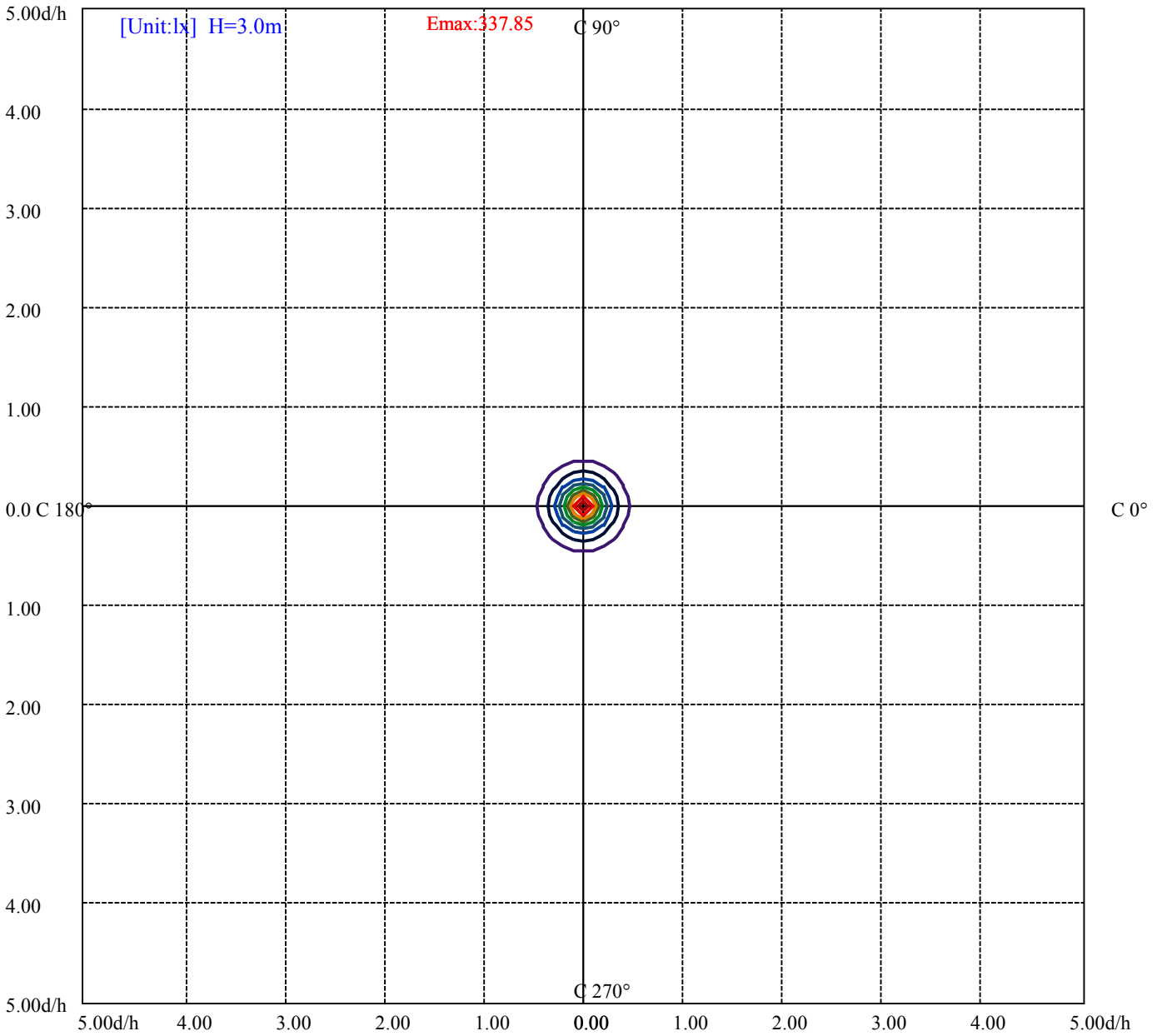
House

[Unit:cd]

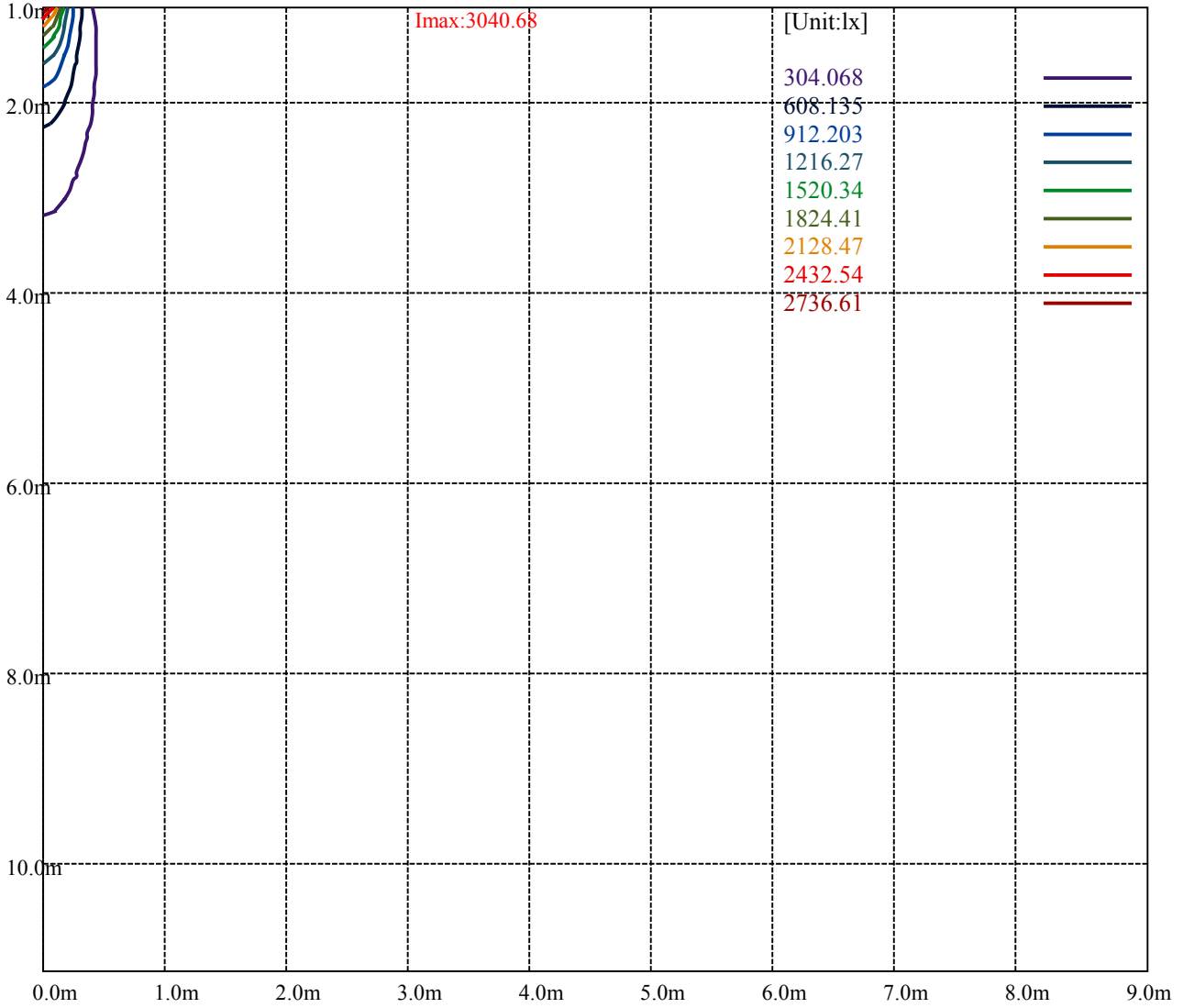
Road

**Imax:3040.68**

|                   |   |
|-------------------|---|
| (10%Imax) 304.068 | — |
| (20%Imax) 608.135 | — |
| (30%Imax) 912.203 | — |
| (40%Imax) 1216.27 | — |
| (50%Imax) 1520.34 | — |
| (60%Imax) 1824.41 | — |
| (70%Imax) 2128.47 | — |
| (80%Imax) 2432.54 | — |
| (90%Imax) 2736.61 | — |



- (10%Emax) 33.78522
- (20%Emax) 67.57044
- (30%Emax) 101.3558
- (40%Emax) 135.1411
- (50%Emax) 168.9267
- (60%Emax) 202.7111
- (70%Emax) 236.4967
- (80%Emax) 270.2822
- (90%Emax) 304.0667



Luminance Table

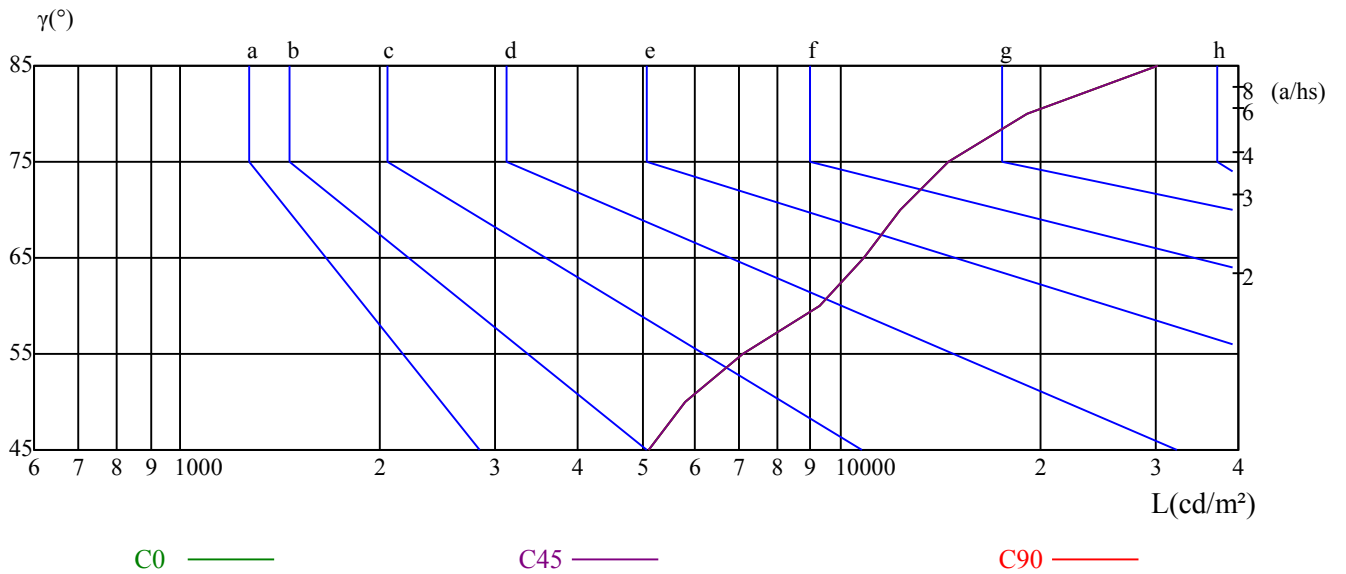
| $\gamma$ | 45   | 50   | 55   | 60   | 65    | 70    | 75    | 80    | 85    |
|----------|------|------|------|------|-------|-------|-------|-------|-------|
| C0       | 5124 | 5826 | 7120 | 9275 | 10839 | 12272 | 14515 | 19099 | 30174 |
| C45      | 5124 | 5826 | 7120 | 9275 | 10839 | 12272 | 14515 | 19099 | 30174 |
| C90      | 5124 | 5826 | 7120 | 9275 | 10839 | 12272 | 14515 | 19099 | 30174 |

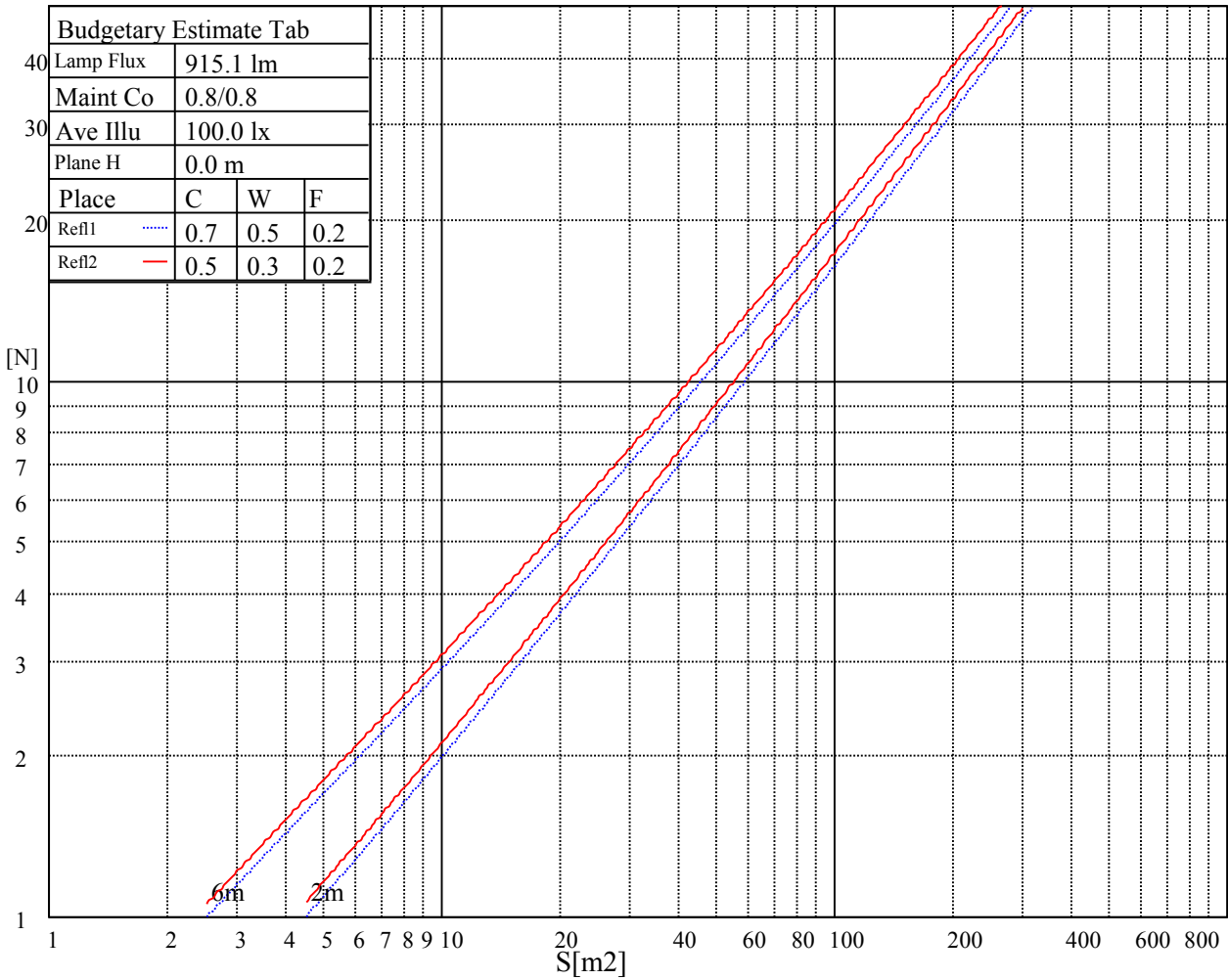
| L(Hor)(65) | L(Ver)(65) | L45(65) | L(Hor)(75) | L(Ver)(75) | L45(75) | L(Hor)(85) | L(Ver)(85) | L45(85) |
|------------|------------|---------|------------|------------|---------|------------|------------|---------|
| 10839      | 10839      | 10839   | 14515      | 14515      | 14515   | 30174      | 30174      | 30174   |

Glare Table

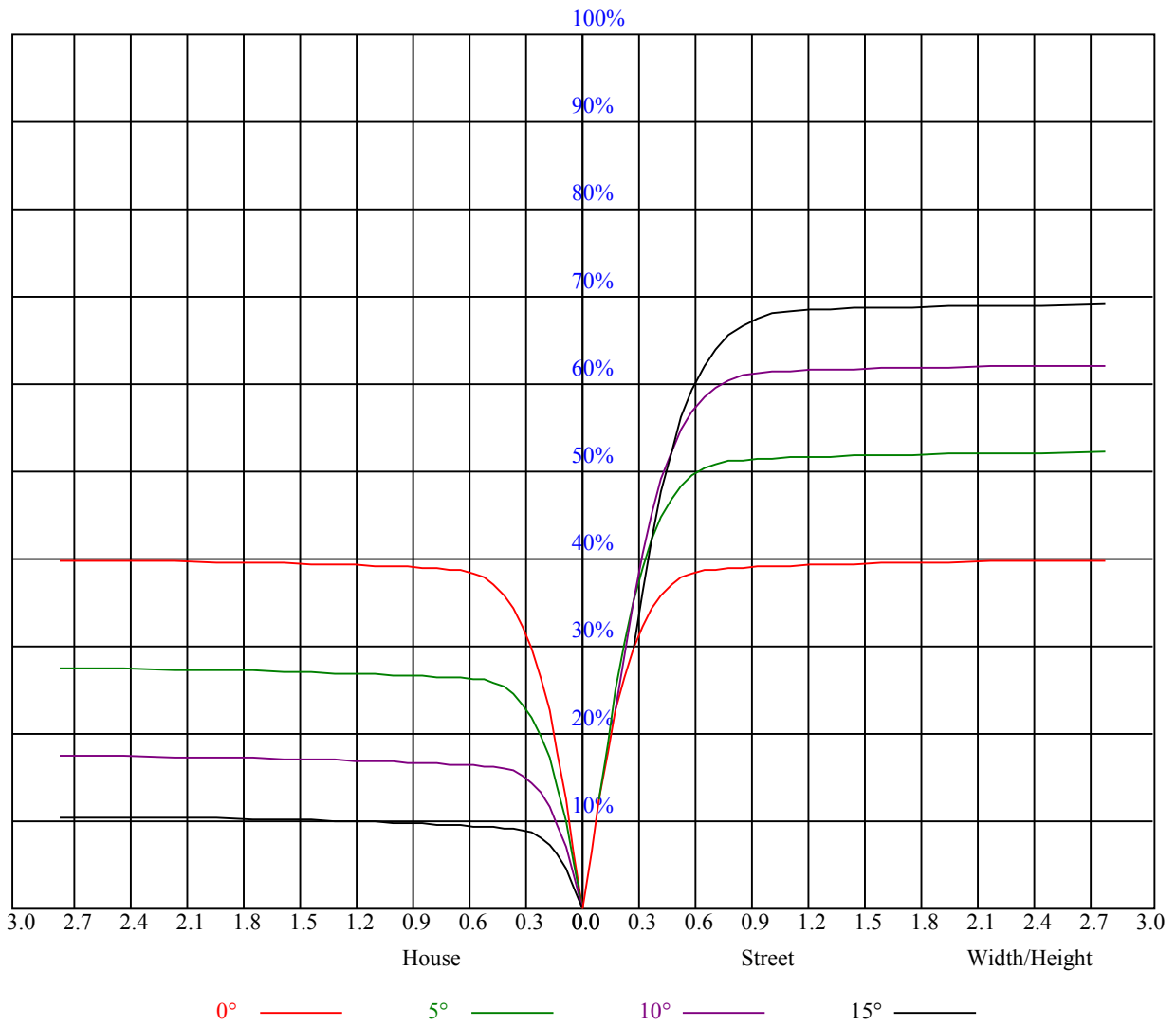
| Glare | Quality | Service Values Illuminance(lx) |      |      |       |       |       |       |       |
|-------|---------|--------------------------------|------|------|-------|-------|-------|-------|-------|
| 1.15  | A       | 2000                           | 1000 | 500  | <=300 |       |       |       |       |
| 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     | 0.96                                    | 0.96 | 0.96 | 0.94 | 0.94 | 0.94 | 0.90 | 0.90 | 0.90 | 0.86 | 0.86 | 0.86 | 0.82 | 0.82 | 0.82 | 0.81 |
| 1     | 0.90                                    | 0.88 | 0.87 | 0.88 | 0.87 | 0.85 | 0.85 | 0.84 | 0.83 | 0.82 | 0.81 | 0.80 | 0.79 | 0.79 | 0.78 | 0.76 |
| 2     | 0.85                                    | 0.82 | 0.80 | 0.84 | 0.81 | 0.79 | 0.81 | 0.79 | 0.77 | 0.79 | 0.77 | 0.76 | 0.77 | 0.75 | 0.74 | 0.73 |
| 3     | 0.81                                    | 0.78 | 0.75 | 0.80 | 0.77 | 0.74 | 0.78 | 0.75 | 0.73 | 0.76 | 0.74 | 0.72 | 0.74 | 0.72 | 0.71 | 0.70 |
| 4     | 0.77                                    | 0.74 | 0.71 | 0.76 | 0.73 | 0.70 | 0.75 | 0.72 | 0.70 | 0.73 | 0.71 | 0.69 | 0.72 | 0.70 | 0.68 | 0.67 |
| 5     | 0.74                                    | 0.70 | 0.68 | 0.73 | 0.70 | 0.67 | 0.72 | 0.69 | 0.67 | 0.71 | 0.68 | 0.66 | 0.70 | 0.67 | 0.66 | 0.65 |
| 6     | 0.71                                    | 0.67 | 0.65 | 0.71 | 0.67 | 0.64 | 0.69 | 0.66 | 0.64 | 0.68 | 0.66 | 0.64 | 0.67 | 0.65 | 0.63 | 0.62 |
| 7     | 0.68                                    | 0.65 | 0.62 | 0.68 | 0.64 | 0.62 | 0.67 | 0.64 | 0.62 | 0.66 | 0.63 | 0.61 | 0.65 | 0.63 | 0.61 | 0.60 |
| 8     | 0.66                                    | 0.62 | 0.60 | 0.66 | 0.62 | 0.60 | 0.65 | 0.62 | 0.59 | 0.64 | 0.61 | 0.59 | 0.63 | 0.61 | 0.59 | 0.58 |
| 9     | 0.64                                    | 0.60 | 0.58 | 0.63 | 0.60 | 0.58 | 0.63 | 0.60 | 0.57 | 0.62 | 0.59 | 0.57 | 0.62 | 0.59 | 0.57 | 0.56 |
| 10    | 0.62                                    | 0.58 | 0.56 | 0.61 | 0.58 | 0.56 | 0.61 | 0.58 | 0.56 | 0.60 | 0.57 | 0.55 | 0.60 | 0.57 | 0.55 | 0.54 |



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    | 3012.14 | 3038.44 | 3030.67 | 2963.15 | 2875.91 | 2748.63 | 2566.99 | 2402.07 | 2242.53 |
| 45.0   | 3052.78 | 3024.09 | 2955.98 | 2853.20 | 2709.79 | 2541.29 | 2368.61 | 2185.16 | 2023.23 |
| 90.0   | 3048.00 | 3008.56 | 2944.62 | 2816.75 | 2664.98 | 2507.23 | 2334.55 | 2121.83 | 1955.71 |
| 135.0  | 3049.79 | 3018.12 | 2942.83 | 2834.68 | 2709.79 | 2539.50 | 2358.45 | 2191.14 | 2029.21 |
| 180.0  | 3012.14 | 2919.53 | 2828.70 | 2685.30 | 2489.90 | 2348.89 | 2182.18 | 1961.69 | 1832.02 |
| 225.0  | 3052.78 | 3034.25 | 2985.85 | 2865.75 | 2742.06 | 2593.28 | 2388.92 | 2225.80 | 2065.06 |
| 270.0  | 3048.00 | 3048.00 | 2999.60 | 2907.58 | 2777.91 | 2613.59 | 2422.38 | 2257.47 | 2096.73 |
| 315.0  | 3049.79 | 3025.29 | 2971.51 | 2865.15 | 2711.59 | 2560.41 | 2395.49 | 2193.53 | 2033.99 |
| 360.0  | 3012.14 | 3038.44 | 3030.67 | 2963.15 | 2875.91 | 2748.63 | 2566.99 | 2402.07 | 2242.53 |
| C/γ(°) | 9.0     | 10.0    | 11.0    | 12.0    | 13.0    | 14.0    | 15.0    | 16.0    | 17.0    |
| 0.0    | 2041.16 | 1899.55 | 1755.54 | 1604.37 | 1460.36 | 1339.06 | 1211.19 | 1089.30 | 991.90  |
| 45.0   | 1845.77 | 1680.85 | 1545.81 | 1414.95 | 1262.58 | 1150.24 | 1049.26 | 936.93  | 849.69  |
| 90.0   | 1802.15 | 1615.72 | 1490.84 | 1358.78 | 1178.69 | 1095.03 | 992.44  | 891.69  | 806.25  |
| 135.0  | 1831.43 | 1682.64 | 1549.39 | 1403.00 | 1269.15 | 1157.41 | 1047.47 | 942.90  | 860.44  |
| 180.0  | 1691.01 | 1514.14 | 1403.00 | 1188.37 | 1175.88 | 1053.38 | 964.53  | 881.18  | 794.89  |
| 225.0  | 1873.25 | 1730.44 | 1590.03 | 1421.52 | 1271.54 | 1174.14 | 1069.28 | 956.94  | 869.46  |
| 270.0  | 1921.06 | 1751.36 | 1612.13 | 1480.08 | 1317.55 | 1197.45 | 1088.70 | 963.22  | 873.59  |
| 315.0  | 1878.63 | 1693.40 | 1560.75 | 1435.86 | 1267.96 | 1174.14 | 1077.70 | 959.03  | 883.87  |
| 360.0  | 2041.16 | 1899.55 | 1755.54 | 1604.37 | 1460.36 | 1339.06 | 1211.19 | 1089.30 | 991.90  |
| C/γ(°) | 18.0    | 19.0    | 20.0    | 21.0    | 22.0    | 23.0    | 24.0    | 25.0    | 26.0    |
| 0.0    | 891.51  | 812.64  | 730.18  | 655.49  | 596.93  | 531.20  | 471.45  | 426.64  | 381.82  |
| 45.0   | 769.02  | 692.54  | 623.82  | 566.46  | 503.72  | 450.54  | 405.72  | 359.12  | 315.50  |
| 90.0   | 716.62  | 644.73  | 577.57  | 518.24  | 459.68  | 414.63  | 377.70  | 326.79  | 289.20  |
| 135.0  | 772.01  | 708.67  | 638.16  | 572.43  | 515.67  | 464.88  | 421.26  | 379.43  | 340.59  |
| 180.0  | 717.21  | 654.47  | 588.87  | 529.05  | 476.77  | 426.99  | 386.36  | 335.81  | 285.56  |
| 225.0  | 777.92  | 698.57  | 635.65  | 568.25  | 508.92  | 458.72  | 415.94  | 369.15  | 328.88  |
| 270.0  | 795.31  | 708.07  | 637.56  | 574.82  | 513.88  | 461.89  | 412.89  | 371.07  | 328.64  |
| 315.0  | 797.82  | 709.09  | 652.74  | 585.64  | 515.31  | 469.24  | 423.65  | 362.70  | 324.76  |
| 360.0  | 891.51  | 812.64  | 730.18  | 655.49  | 596.93  | 531.20  | 471.45  | 426.64  | 381.82  |
| C/γ(°) | 27.0    | 28.0    | 29.0    | 30.0    | 31.0    | 32.0    | 33.0    | 34.0    | 35.0    |
| 0.0    | 325.06  | 301.75  | 235.43  | 190.85  | 151.71  | 120.46  | 86.40   | 56.05   | 36.45   |
| 45.0   | 304.14  | 222.04  | 182.55  | 145.86  | 108.09  | 77.08   | 53.72   | 31.43   | 22.23   |
| 90.0   | 246.72  | 206.27  | 165.81  | 134.50  | 101.10  | 72.72   | 49.54   | 31.13   | 22.35   |
| 135.0  | 305.94  | 242.12  | 200.53  | 163.01  | 121.72  | 89.81   | 64.35   | 38.90   | 25.34   |
| 180.0  | 243.73  | 203.16  | 157.69  | 124.59  | 92.62   | 59.39   | 37.94   | 25.69   | 18.76   |
| 225.0  | 289.44  | 239.91  | 203.52  | 168.80  | 132.29  | 100.09  | 73.56   | 48.70   | 32.98   |
| 270.0  | 302.95  | 233.99  | 195.27  | 161.45  | 122.61  | 94.95   | 69.61   | 43.68   | 30.95   |
| 315.0  | 283.11  | 234.05  | 189.24  | 155.42  | 116.94  | 83.65   | 59.04   | 36.33   | 25.34   |
| 360.0  | 325.06  | 301.75  | 235.43  | 190.85  | 151.71  | 120.46  | 86.40   | 56.05   | 36.45   |
| C/γ(°) | 36.0    | 37.0    | 38.0    | 39.0    | 40.0    | 41.0    | 42.0    | 43.0    | 44.0    |
| 0.0    | 24.38   | 20.32   | 17.81   | 12.67   | 8.43    | 7.83    | 7.29    | 6.93    | 6.69    |
| 45.0   | 19.12   | 16.07   | 11.89   | 7.83    | 7.29    | 6.87    | 6.51    | 6.21    | 5.98    |
| 90.0   | 18.28   | 15.60   | 12.31   | 9.20    | 8.55    | 8.07    | 7.71    | 7.35    | 7.17    |
| 135.0  | 19.84   | 17.27   | 13.74   | 9.80    | 8.78    | 8.13    | 7.59    | 7.17    | 6.81    |
| 180.0  | 16.37   | 14.04   | 9.56    | 8.78    | 8.25    | 7.71    | 7.29    | 6.93    | 6.69    |
| 225.0  | 24.38   | 21.39   | 17.87   | 11.95   | 10.10   | 9.32    | 8.60    | 7.95    | 7.47    |
| 270.0  | 23.84   | 20.08   | 15.84   | 11.29   | 9.80    | 9.02    | 8.43    | 8.01    | 7.83    |
| 315.0  | 20.85   | 17.63   | 13.68   | 8.49    | 7.89    | 7.41    | 6.99    | 6.57    | 6.33    |
| 360.0  | 24.38   | 20.32   | 17.81   | 12.67   | 8.43    | 7.83    | 7.29    | 6.93    | 6.69    |



Intensity data(cd)

|        |       |       |       |       |       |       |       |       |       |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C/γ(°) | 45.0  | 46.0  | 47.0  | 48.0  | 49.0  | 50.0  | 51.0  | 52.0  | 53.0  |
| 0.0    | 6.51  | 6.57  | 6.69  | 7.11  | 7.41  | 7.59  | 7.77  | 8.01  | 8.19  |
| 45.0   | 5.74  | 5.56  | 5.44  | 5.32  | 5.32  | 5.32  | 5.38  | 5.50  | 5.68  |
| 90.0   | 7.05  | 7.05  | 7.05  | 7.11  | 7.17  | 7.17  | 6.87  | 6.93  | 6.93  |
| 135.0  | 6.51  | 6.39  | 6.33  | 6.39  | 6.45  | 6.57  | 6.63  | 6.63  | 6.69  |
| 180.0  | 6.63  | 6.69  | 6.81  | 6.87  | 6.93  | 6.99  | 6.99  | 7.05  | 7.05  |
| 225.0  | 7.11  | 6.75  | 6.51  | 6.27  | 6.16  | 6.04  | 5.98  | 5.98  | 6.04  |
| 270.0  | 7.89  | 7.95  | 8.13  | 8.43  | 8.55  | 8.66  | 8.49  | 8.66  | 8.60  |
| 315.0  | 6.16  | 6.10  | 6.16  | 6.39  | 6.75  | 7.05  | 7.41  | 7.71  | 8.01  |
| 360.0  | 6.51  | 6.57  | 6.69  | 7.11  | 7.41  | 7.59  | 7.77  | 8.01  | 8.19  |
| C/γ(°) | 54.0  | 55.0  | 56.0  | 57.0  | 58.0  | 59.0  | 60.0  | 61.0  | 62.0  |
| 0.0    | 8.55  | 8.78  | 9.20  | 9.50  | 9.68  | 9.80  | 9.86  | 9.98  | 10.04 |
| 45.0   | 5.80  | 5.92  | 6.04  | 6.16  | 6.27  | 6.57  | 6.87  | 6.93  | 6.93  |
| 90.0   | 6.69  | 7.05  | 7.29  | 6.81  | 6.99  | 7.17  | 6.93  | 6.93  | 6.57  |
| 135.0  | 6.75  | 6.87  | 7.17  | 7.41  | 7.83  | 7.83  | 7.77  | 7.59  | 7.47  |
| 180.0  | 7.11  | 7.23  | 7.35  | 7.35  | 7.35  | 7.35  | 7.35  | 7.35  | 7.29  |
| 225.0  | 6.21  | 6.33  | 6.39  | 6.45  | 6.57  | 6.63  | 6.87  | 6.99  | 7.05  |
| 270.0  | 8.72  | 9.20  | 9.86  | 10.28 | 10.40 | 10.88 | 11.00 | 10.94 | 10.40 |
| 315.0  | 8.43  | 9.02  | 10.10 | 11.11 | 12.01 | 12.19 | 11.95 | 11.53 | 11.47 |
| 360.0  | 8.55  | 8.78  | 9.20  | 9.50  | 9.68  | 9.80  | 9.86  | 9.98  | 10.04 |
| C/γ(°) | 63.0  | 64.0  | 65.0  | 66.0  | 67.0  | 68.0  | 69.0  | 70.0  | 71.0  |
| 0.0    | 10.16 | 10.16 | 10.04 | 9.68  | 9.14  | 8.96  | 8.90  | 8.90  | 8.72  |
| 45.0   | 6.87  | 6.81  | 6.69  | 6.57  | 6.45  | 6.45  | 6.39  | 6.33  | 6.16  |
| 90.0   | 6.57  | 6.45  | 6.33  | 6.33  | 5.98  | 6.04  | 5.92  | 5.80  | 5.68  |
| 135.0  | 7.53  | 7.71  | 7.83  | 7.77  | 7.47  | 7.17  | 7.05  | 6.87  | 6.69  |
| 180.0  | 7.23  | 7.05  | 6.81  | 6.63  | 6.51  | 6.51  | 6.39  | 6.33  | 6.16  |
| 225.0  | 7.11  | 7.17  | 7.23  | 7.17  | 7.11  | 6.99  | 6.87  | 6.69  | 6.51  |
| 270.0  | 10.04 | 10.04 | 10.04 | 10.58 | 10.70 | 10.82 | 10.40 | 9.68  | 9.44  |
| 315.0  | 11.71 | 12.25 | 12.79 | 12.73 | 12.19 | 11.53 | 11.47 | 11.47 | 11.41 |
| 360.0  | 10.16 | 10.16 | 10.04 | 9.68  | 9.14  | 8.96  | 8.90  | 8.90  | 8.72  |
| C/γ(°) | 72.0  | 73.0  | 74.0  | 75.0  | 76.0  | 77.0  | 78.0  | 79.0  | 80.0  |
| 0.0    | 8.37  | 7.89  | 7.77  | 7.65  | 7.17  | 7.11  | 6.93  | 6.69  | 6.51  |
| 45.0   | 6.04  | 5.98  | 5.86  | 5.86  | 5.80  | 5.68  | 5.68  | 5.56  | 5.50  |
| 90.0   | 5.56  | 5.56  | 5.56  | 5.50  | 5.50  | 5.50  | 5.38  | 5.32  | 5.26  |
| 135.0  | 6.51  | 6.33  | 6.27  | 6.16  | 6.10  | 6.04  | 5.98  | 5.92  | 5.86  |
| 180.0  | 6.10  | 5.98  | 5.92  | 5.86  | 5.86  | 5.80  | 5.74  | 5.68  | 5.56  |
| 225.0  | 6.51  | 6.45  | 6.33  | 6.16  | 6.04  | 5.92  | 5.86  | 5.74  | 5.62  |
| 270.0  | 9.26  | 9.26  | 9.08  | 8.66  | 8.31  | 8.13  | 7.65  | 7.47  | 7.05  |
| 315.0  | 10.82 | 10.46 | 10.40 | 9.74  | 9.50  | 8.84  | 8.72  | 8.07  | 7.71  |
| 360.0  | 8.37  | 7.89  | 7.77  | 7.65  | 7.17  | 7.11  | 6.93  | 6.69  | 6.51  |
| C/γ(°) | 81.0  | 82.0  | 83.0  | 84.0  | 85.0  | 86.0  | 87.0  | 88.0  | 89.0  |
| 0.0    | 6.33  | 6.21  | 6.10  | 6.04  | 5.92  | 5.86  | 5.74  | 3.47  | 3.29  |
| 45.0   | 5.44  | 5.38  | 5.26  | 5.20  | 4.90  | 3.47  | 3.35  | 3.35  | 3.29  |
| 90.0   | 5.20  | 5.08  | 5.02  | 4.78  | 3.47  | 3.35  | 3.29  | 3.29  | 3.23  |
| 135.0  | 5.80  | 5.68  | 5.62  | 5.50  | 3.53  | 3.35  | 3.29  | 3.23  | 3.17  |
| 180.0  | 5.56  | 5.50  | 5.38  | 4.66  | 3.41  | 3.35  | 3.29  | 3.23  | 3.17  |
| 225.0  | 5.56  | 5.50  | 5.44  | 5.38  | 5.26  | 5.14  | 3.47  | 3.35  | 3.35  |
| 270.0  | 6.69  | 6.27  | 6.10  | 5.98  | 5.86  | 5.74  | 3.71  | 3.29  | 3.29  |
| 315.0  | 7.29  | 6.93  | 6.81  | 6.75  | 6.57  | 6.45  | 3.71  | 3.29  | 3.23  |
| 360.0  | 6.33  | 6.21  | 6.10  | 6.04  | 5.92  | 5.86  | 5.74  | 3.47  | 3.29  |

Intensity data(cd)

|               |             |
|---------------|-------------|
| <b>C/γ(°)</b> | <b>90.0</b> |
| <b>0.0</b>    | <b>3.29</b> |
| <b>45.0</b>   | <b>3.23</b> |
| <b>90.0</b>   | <b>3.23</b> |
| <b>135.0</b>  | <b>3.17</b> |
| <b>180.0</b>  | <b>3.17</b> |
| <b>225.0</b>  | <b>3.29</b> |
| <b>270.0</b>  | <b>3.23</b> |
| <b>315.0</b>  | <b>3.17</b> |
| <b>360.0</b>  | <b>3.29</b> |