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## Nata

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Client:

LumCAT: CR01D07515AR

Luminaire: 92.70.074.00

Report No:

Voltage(V): 34.7000

Test No: GC2019072303

Current(A): 0.2970

LampCAT: CREE CXA1820

Power (W): 10.3100

Lamp flux(lm): 1109.0

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 75

Width(mm): 75

Phm Type: C

Height(mm): 0

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## Photometric Results

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Lumens(lm): 982.97, Efficiency(%): 88.64% , Luminous Efficacy(lm/W): 95.34

Central intensity(cd): 10699.870, Maximum intensity(cd): 10699.870

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

Beam Angle(50%Imax): [C0/180]Total=14.4

[C90/270]Total=14.4

Field angle(10%Imax): [C0/180]Total=26.8

[C90/270]Total=26.8

Maximum s/h(1/2): C0\_180=0.25 C90\_270=0.25

Maximum s/h(1/4): C0\_180=0.24 C90\_270=0.24

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 88.64%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 95.680%

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Equipment: GMS1980  
Temperature(°C): 25.0

Date: 2019/7/23  
Humidity(%): 65.0%

Operator: NT07  
Distance(m): 7.50

| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 0.0                | 10699.875     | 0.000       | 0         | .000%       | .000%      |
| 1.0                | 10620.141     | 10.201      | 10.201    | .920%       | 1.038%     |
| 2.0                | 10334.602     | 30.076      | 40.277    | 2.712%      | 4.098%     |
| 3.0                | 9783.633      | 48.116      | 88.394    | 4.339%      | 8.993%     |
| 4.0                | 9027.492      | 62.967      | 151.361   | 5.678%      | 15.398%    |
| 5.0                | 8067.656      | 73.542      | 224.903   | 6.631%      | 22.880%    |
| 6.0                | 6804.984      | 78.160      | 303.063   | 7.048%      | 30.831%    |
| 7.0                | 5553.984      | 76.712      | 379.775   | 6.917%      | 38.636%    |
| 8.0                | 4451.273      | 71.606      | 451.38    | 6.457%      | 45.920%    |
| 9.0                | 3418.734      | 63.782      | 515.162   | 5.751%      | 52.409%    |
| 10.0               | 2540.883      | 53.932      | 569.095   | 4.863%      | 57.896%    |
| 11.0               | 1969.629      | 45.069      | 614.164   | 4.064%      | 62.481%    |
| 12.0               | 1552.507      | 38.502      | 652.666   | 3.472%      | 66.398%    |
| 13.0               | 1156.887      | 32.154      | 684.82    | 2.899%      | 69.669%    |
| 14.0               | 937.245       | 26.805      | 711.624   | 2.417%      | 72.396%    |
| 15.0               | 788.323       | 23.689      | 735.314   | 2.136%      | 74.806%    |
| 16.0               | 640.849       | 20.941      | 756.255   | 1.888%      | 76.936%    |
| 17.0               | 521.508       | 18.101      | 774.356   | 1.632%      | 78.777%    |
| 18.0               | 426.593       | 15.632      | 789.988   | 1.410%      | 80.368%    |
| 19.0               | 350.346       | 13.517      | 803.505   | 1.219%      | 81.743%    |
| 20.0               | 279.035       | 11.519      | 815.025   | 1.039%      | 82.915%    |
| 21.0               | 218.180       | 9.548       | 824.572   | .861%       | 83.886%    |
| 22.0               | 176.498       | 7.931       | 832.504   | .715%       | 84.693%    |
| 23.0               | 141.982       | 6.683       | 839.186   | .603%       | 85.373%    |
| 24.0               | 116.641       | 5.654       | 844.841   | .510%       | 85.948%    |
| 25.0               | 98.993        | 4.903       | 849.744   | .442%       | 86.447%    |
| 26.0               | 87.286        | 4.397       | 854.141   | .396%       | 86.894%    |
| 27.0               | 78.708        | 4.061       | 858.202   | .366%       | 87.307%    |
| 28.0               | 71.592        | 3.805       | 862.007   | .343%       | 87.694%    |
| 29.0               | 67.493        | 3.639       | 865.646   | .328%       | 88.065%    |
| 30.0               | 64.336        | 3.559       | 869.205   | .321%       | 88.427%    |
| 31.0               | 61.791        | 3.510       | 872.715   | .316%       | 88.784%    |
| 32.0               | 59.337        | 3.470       | 876.185   | .313%       | 89.137%    |
| 33.0               | 56.320        | 3.407       | 879.593   | .307%       | 89.483%    |
| 34.0               | 52.580        | 3.296       | 882.888   | .297%       | 89.819%    |
| 35.0               | 47.313        | 3.102       | 885.991   | .280%       | 90.134%    |
| 36.0               | 42.103        | 2.847       | 888.838   | .257%       | 90.424%    |
| 37.0               | 36.809        | 2.574       | 891.411   | .232%       | 90.686%    |

| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 38.0               | 32.618        | 2.317       | 893.729   | .209%       | 90.922%    |
| 39.0               | 29.672        | 2.126       | 895.855   | .192%       | 91.138%    |
| 40.0               | 28.266        | 2.021       | 897.876   | .182%       | 91.343%    |
| 41.0               | 28.167        | 2.010       | 899.885   | .181%       | 91.548%    |
| 42.0               | 28.455        | 2.057       | 901.942   | .186%       | 91.757%    |
| 43.0               | 29.152        | 2.134       | 904.076   | .192%       | 91.974%    |
| 44.0               | 29.974        | 2.232       | 906.308   | .201%       | 92.201%    |
| 45.0               | 30.431        | 2.321       | 908.629   | .209%       | 92.437%    |
| 46.0               | 30.642        | 2.388       | 911.018   | .215%       | 92.680%    |
| 47.0               | 30.642        | 2.437       | 913.455   | .220%       | 92.928%    |
| 48.0               | 30.319        | 2.464       | 915.919   | .222%       | 93.179%    |
| 49.0               | 29.496        | 2.456       | 918.376   | .221%       | 93.429%    |
| 50.0               | 28.343        | 2.412       | 920.787   | .217%       | 93.674%    |
| 51.0               | 27.183        | 2.349       | 923.137   | .212%       | 93.913%    |
| 52.0               | 25.629        | 2.266       | 925.403   | .204%       | 94.144%    |
| 53.0               | 24.188        | 2.167       | 927.57    | .195%       | 94.364%    |
| 54.0               | 23.196        | 2.088       | 929.658   | .188%       | 94.577%    |
| 55.0               | 21.881        | 2.012       | 931.67    | .181%       | 94.782%    |
| 56.0               | 20.602        | 1.920       | 933.59    | .173%       | 94.977%    |
| 57.0               | 19.512        | 1.834       | 935.424   | .165%       | 95.163%    |
| 58.0               | 18.499        | 1.758       | 937.182   | .158%       | 95.342%    |
| 59.0               | 17.655        | 1.690       | 938.872   | .152%       | 95.514%    |
| 60.0               | 16.868        | 1.631       | 940.503   | .147%       | 95.680%    |
| 61.0               | 16.095        | 1.573       | 942.076   | .142%       | 95.840%    |
| 62.0               | 15.567        | 1.526       | 943.602   | .138%       | 95.995%    |
| 63.0               | 15.195        | 1.496       | 945.098   | .135%       | 96.148%    |
| 64.0               | 14.752        | 1.469       | 946.567   | .133%       | 96.297%    |
| 65.0               | 14.414        | 1.443       | 948.011   | .130%       | 96.444%    |
| 66.0               | 14.154        | 1.425       | 949.436   | .129%       | 96.589%    |
| 67.0               | 13.957        | 1.413       | 950.85    | .127%       | 96.733%    |
| 68.0               | 13.880        | 1.410       | 952.26    | .127%       | 96.876%    |
| 69.0               | 14.020        | 1.423       | 953.683   | .128%       | 97.021%    |
| 70.0               | 14.203        | 1.450       | 955.133   | .131%       | 97.168%    |
| 71.0               | 14.323        | 1.474       | 956.607   | .133%       | 97.318%    |
| 72.0               | 14.302        | 1.488       | 958.095   | .134%       | 97.470%    |
| 73.0               | 14.302        | 1.496       | 959.591   | .135%       | 97.622%    |
| 74.0               | 14.597        | 1.519       | 961.11    | .137%       | 97.777%    |
| 75.0               | 15.335        | 1.581       | 962.692   | .143%       | 97.937%    |

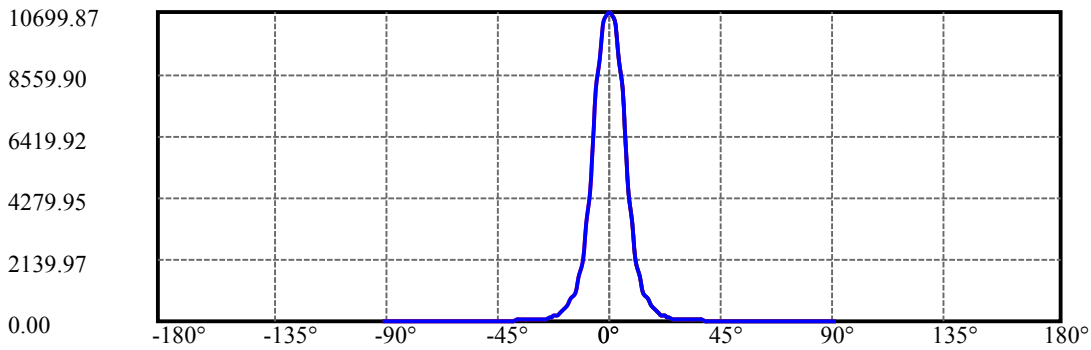
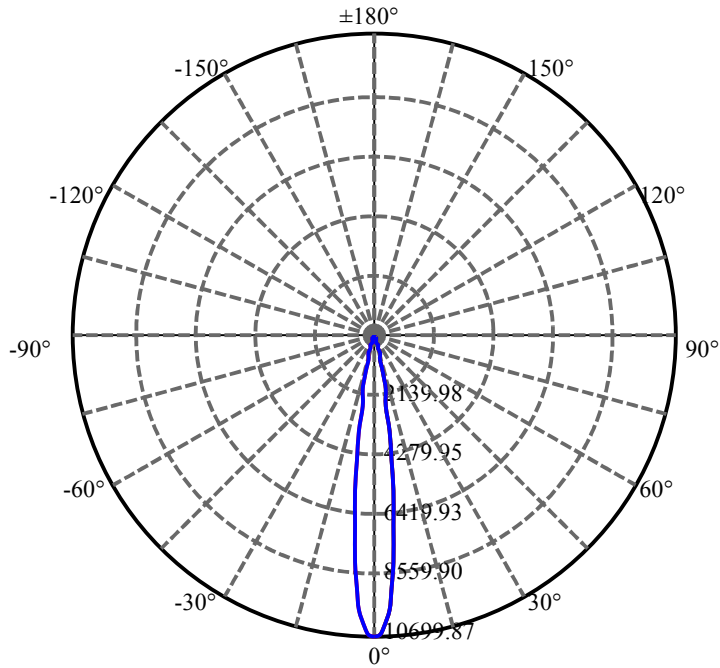
| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 76.0               | 16.545        | 1.692       | 964.384   | .153%       | 98.110%    |
| 77.0               | 16.263        | 1.749       | 966.133   | .158%       | 98.288%    |
| 78.0               | 15.033        | 1.675       | 967.809   | .151%       | 98.458%    |
| 79.0               | 13.549        | 1.536       | 969.344   | .138%       | 98.614%    |
| 80.0               | 12.649        | 1.412       | 970.757   | .127%       | 98.758%    |
| 81.0               | 12.234        | 1.346       | 972.102   | .121%       | 98.895%    |
| 82.0               | 11.728        | 1.299       | 973.402   | .117%       | 99.027%    |
| 83.0               | 11.201        | 1.246       | 974.648   | .112%       | 99.154%    |
| 84.0               | 11.095        | 1.215       | 975.863   | .110%       | 99.277%    |
| 85.0               | 11.060        | 1.209       | 977.072   | .109%       | 99.400%    |
| 86.0               | 11.243        | 1.219       | 978.291   | .110%       | 99.524%    |
| 87.0               | 11.334        | 1.236       | 979.527   | .111%       | 99.650%    |
| 88.0               | 11.004        | 1.224       | 980.75    | .110%       | 99.775%    |
| 89.0               | 10.041        | 1.153       | 981.904   | .104%       | 99.892%    |
| 90.0               | 9.338         | 1.062       | 982.966   | .096%       | 100.000%   |

ZONAL LUMEN SUMMARY

| Zone    | Lumens | %Lamp  | %Fixt   |
|---------|--------|--------|---------|
| 0-30    | 869.21 | 78.38% | 88.43%  |
| 0-40    | 897.88 | 80.96% | 91.34%  |
| 0-60    | 940.50 | 84.81% | 95.68%  |
| 0-90    | 981.90 | 88.54% | 99.89%  |
| 0-120   | 981.90 | 88.54% | 99.89%  |
| 0-180   | 982.97 | 88.64% | 100.00% |
| 60-90   | 43.03  | 3.88%  | 4.38%   |
| 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%   |
| 0-17.77 | 786.37 | 70.91% | 80.00%  |

ZONAL LUMEN SUMMARY

|         |        |
|---------|--------|
| 0-10    | 569.09 |
| 10-20   | 245.93 |
| 20-30   | 54.18  |
| 30-40   | 28.67  |
| 40-50   | 22.91  |
| 50-60   | 19.72  |
| 60-70   | 14.63  |
| 70-80   | 15.62  |
| 80-90   | 11.15  |
| 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): —————

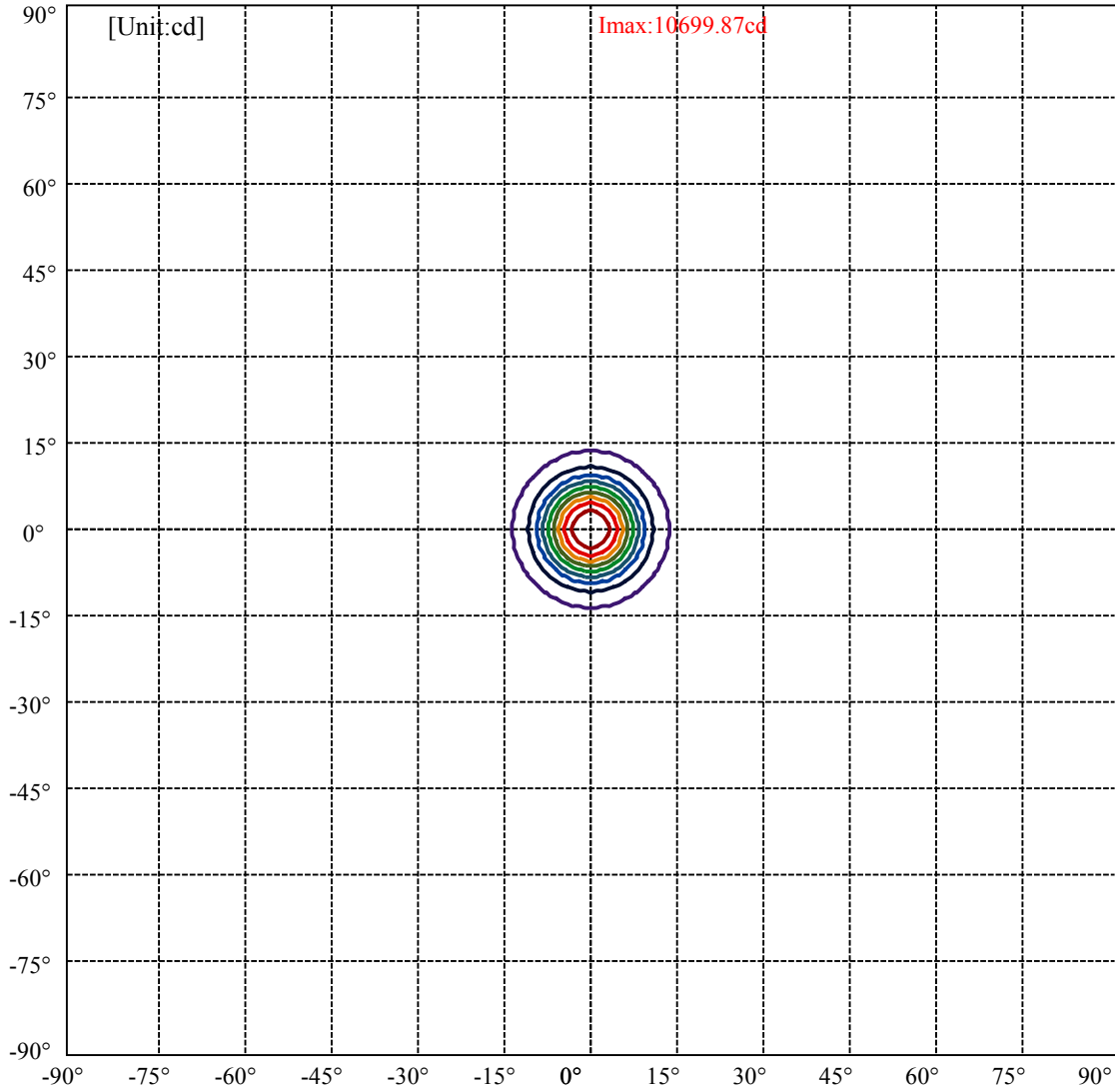
C0/C180: —————

C90/C270: —————

Field angle(10%Imax):C0/180Left:13.4 Right:13.4  
:C90/270Left:13.4 Right:13.4

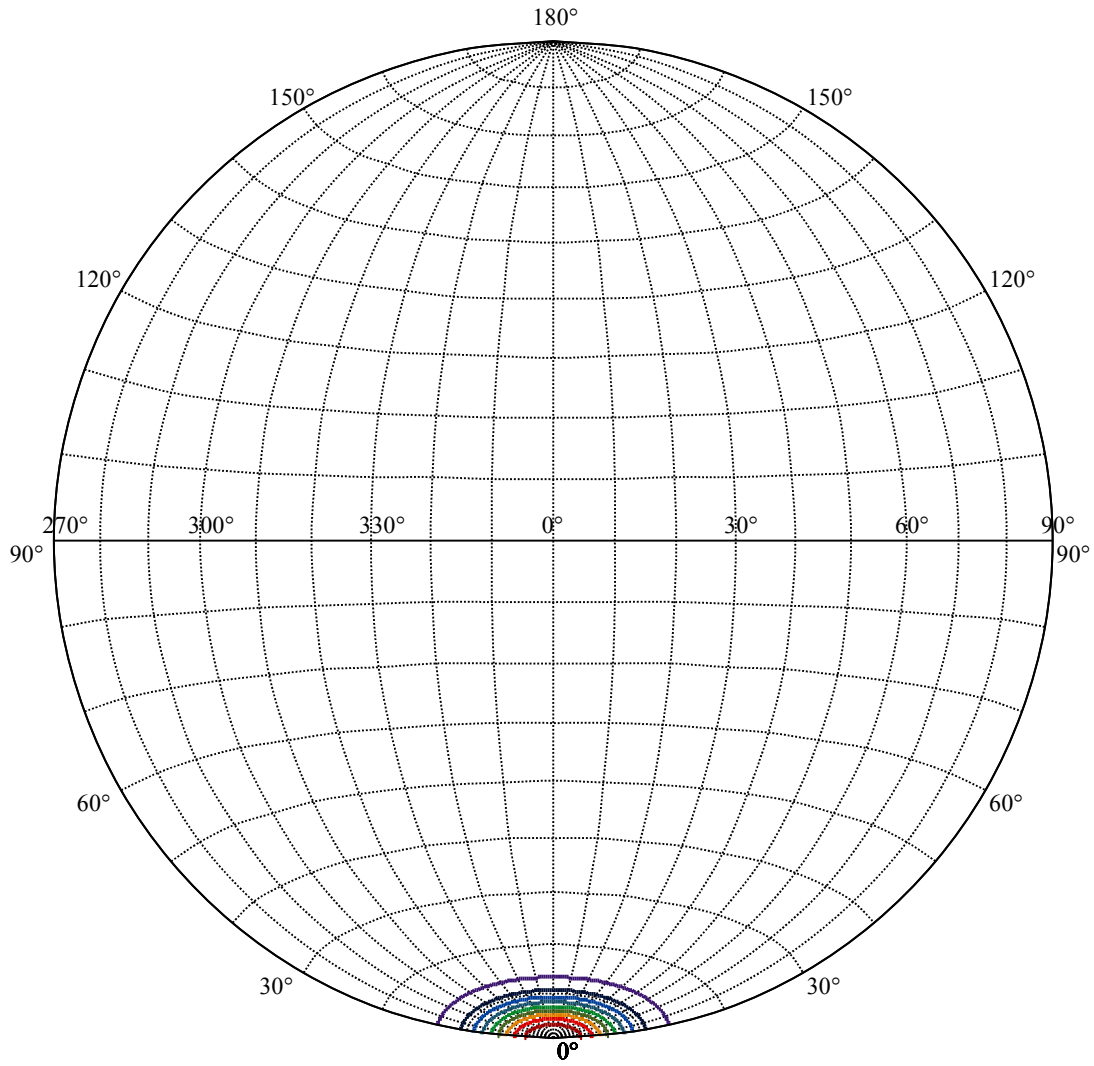
Beam Angle(50%Imax):C0/180Left:7.2 Right:7.2  
:C90/270Left:7.2 Right:7.2





|                                |   |
|--------------------------------|---|
| (10%I <sub>max</sub> ) 1069.99 | — |
| (20%I <sub>max</sub> ) 2139.97 | — |
| (30%I <sub>max</sub> ) 3209.96 | — |
| (40%I <sub>max</sub> ) 4279.95 | — |
| (50%I <sub>max</sub> ) 5349.94 | — |
| (60%I <sub>max</sub> ) 6419.92 | — |
| (70%I <sub>max</sub> ) 7489.91 | — |
| (80%I <sub>max</sub> ) 8559.9  | — |
| (90%I <sub>max</sub> ) 9629.89 | — |





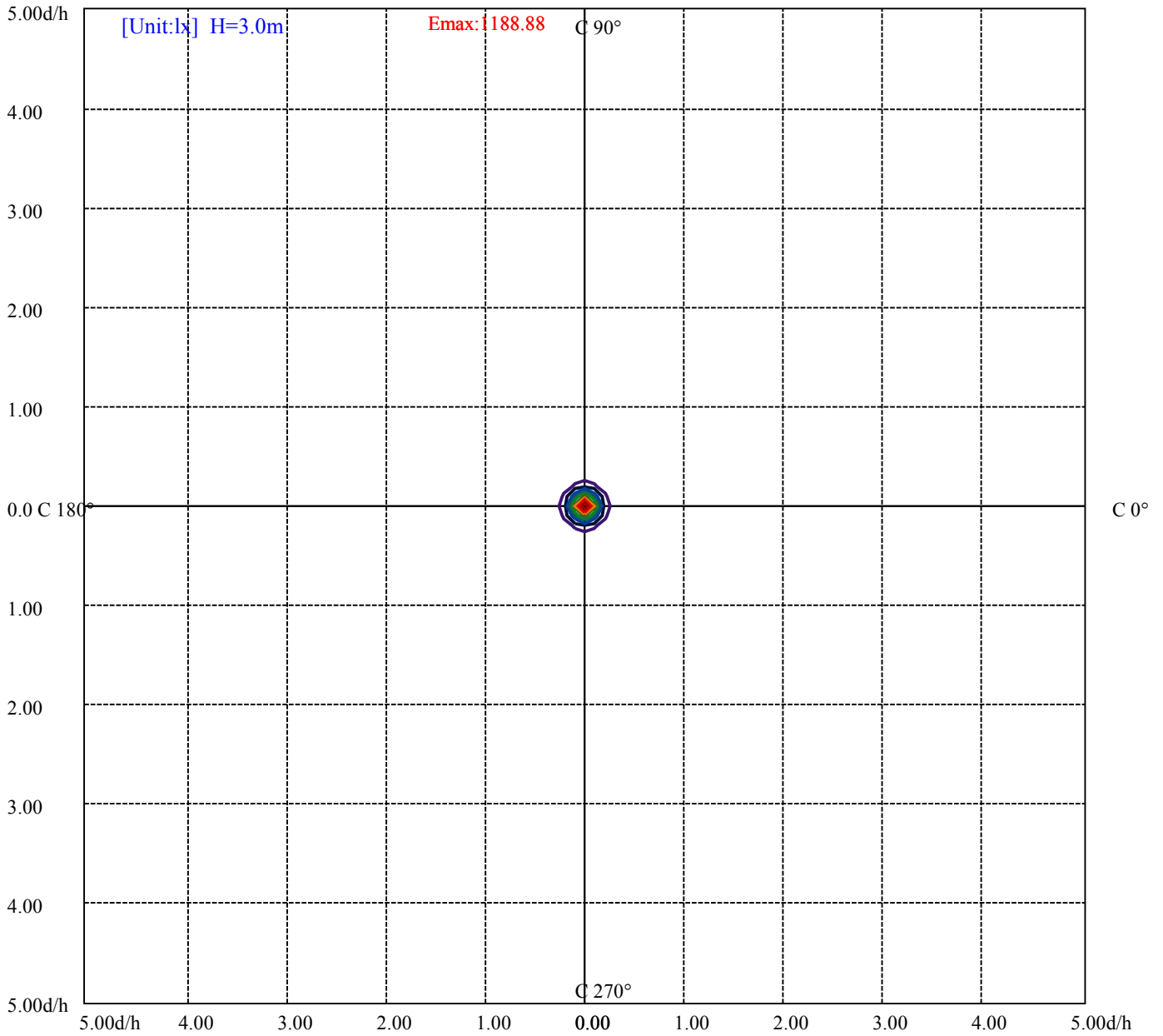
House

[Unit:cd]

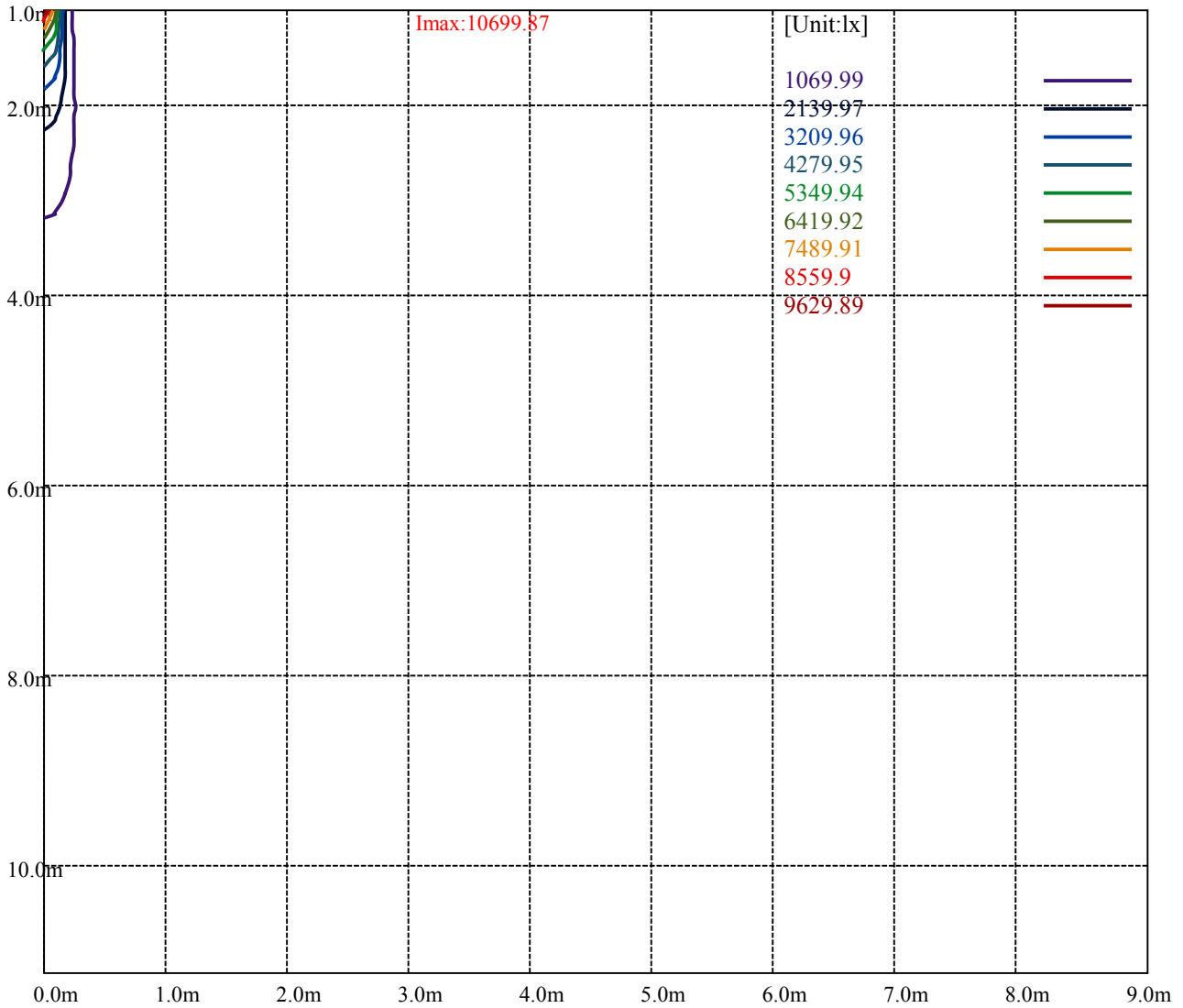
Road

Imax:10699.87

|           |         |   |
|-----------|---------|---|
| (10%Imax) | 1069.99 | — |
| (20%Imax) | 2139.97 | — |
| (30%Imax) | 3209.96 | — |
| (40%Imax) | 4279.95 | — |
| (50%Imax) | 5349.94 | — |
| (60%Imax) | 6419.92 | — |
| (70%Imax) | 7489.91 | — |
| (80%Imax) | 8559.9  | — |
| (90%Imax) | 9629.89 | — |



|                    |   |
|--------------------|---|
| (10%Emax) 118.8878 | — |
| (20%Emax) 237.7744 | — |
| (30%Emax) 356.6622 | — |
| (40%Emax) 475.5489 | — |
| (50%Emax) 594.4367 | — |
| (60%Emax) 713.3245 | — |
| (70%Emax) 832.2111 | — |
| (80%Emax) 951.0989 | — |
| (90%Emax) 1069.987 | — |



Luminance Table

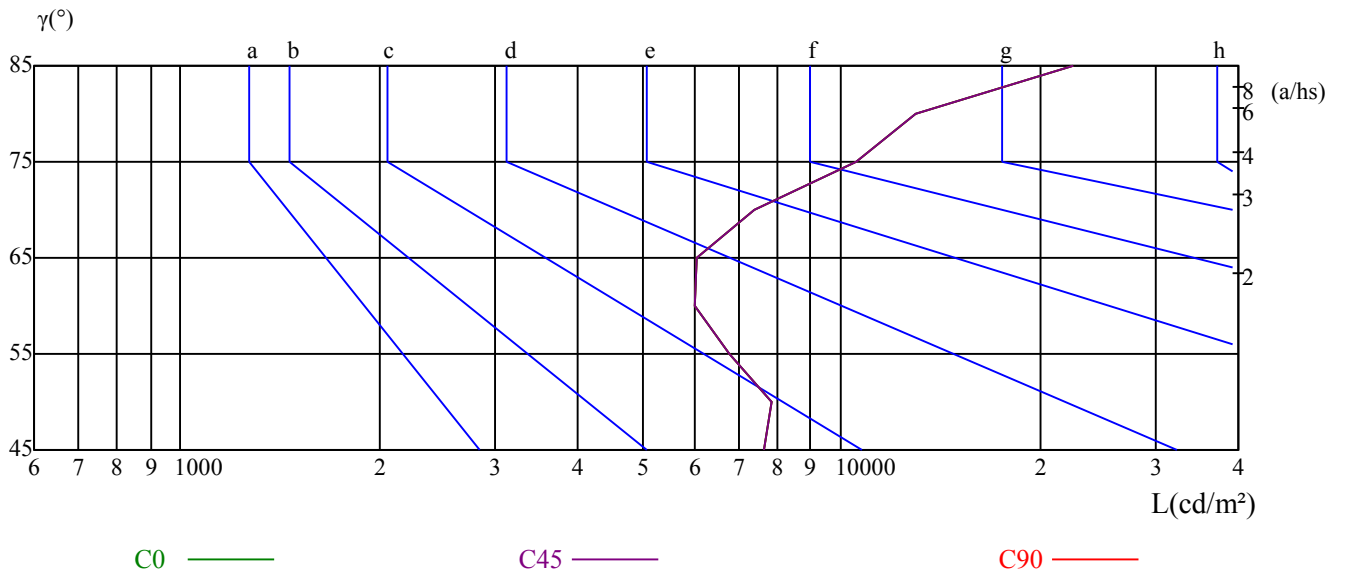
| $\gamma$ | 45   | 50   | 55   | 60   | 65   | 70   | 75    | 80    | 85    |
|----------|------|------|------|------|------|------|-------|-------|-------|
| C0       | 7651 | 7839 | 6782 | 5998 | 6063 | 7383 | 10533 | 12950 | 22560 |
| C45      | 7651 | 7839 | 6782 | 5998 | 6063 | 7383 | 10533 | 12950 | 22560 |
| C90      | 7651 | 7839 | 6782 | 5998 | 6063 | 7383 | 10533 | 12950 | 22560 |

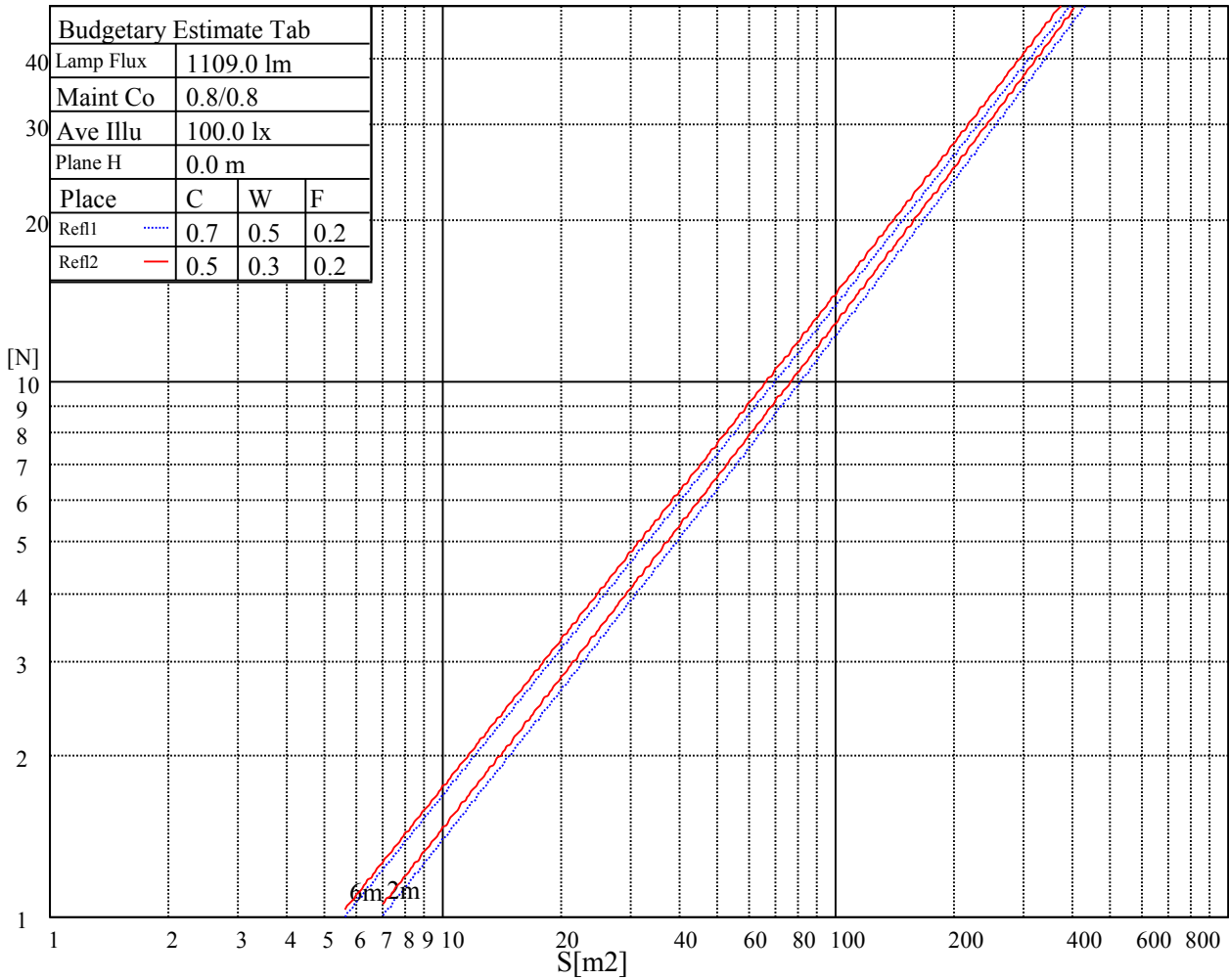
| L(Hor)(65) | L(Ver)(65) | L45(65) | L(Hor)(75) | L(Ver)(75) | L45(75) | L(Hor)(85) | L(Ver)(85) | L45(85) |
|------------|------------|---------|------------|------------|---------|------------|------------|---------|
| 6063       | 6063       | 6063    | 10533      | 10533      | 10533   | 22560      | 22560      | 22560   |

Glare Table

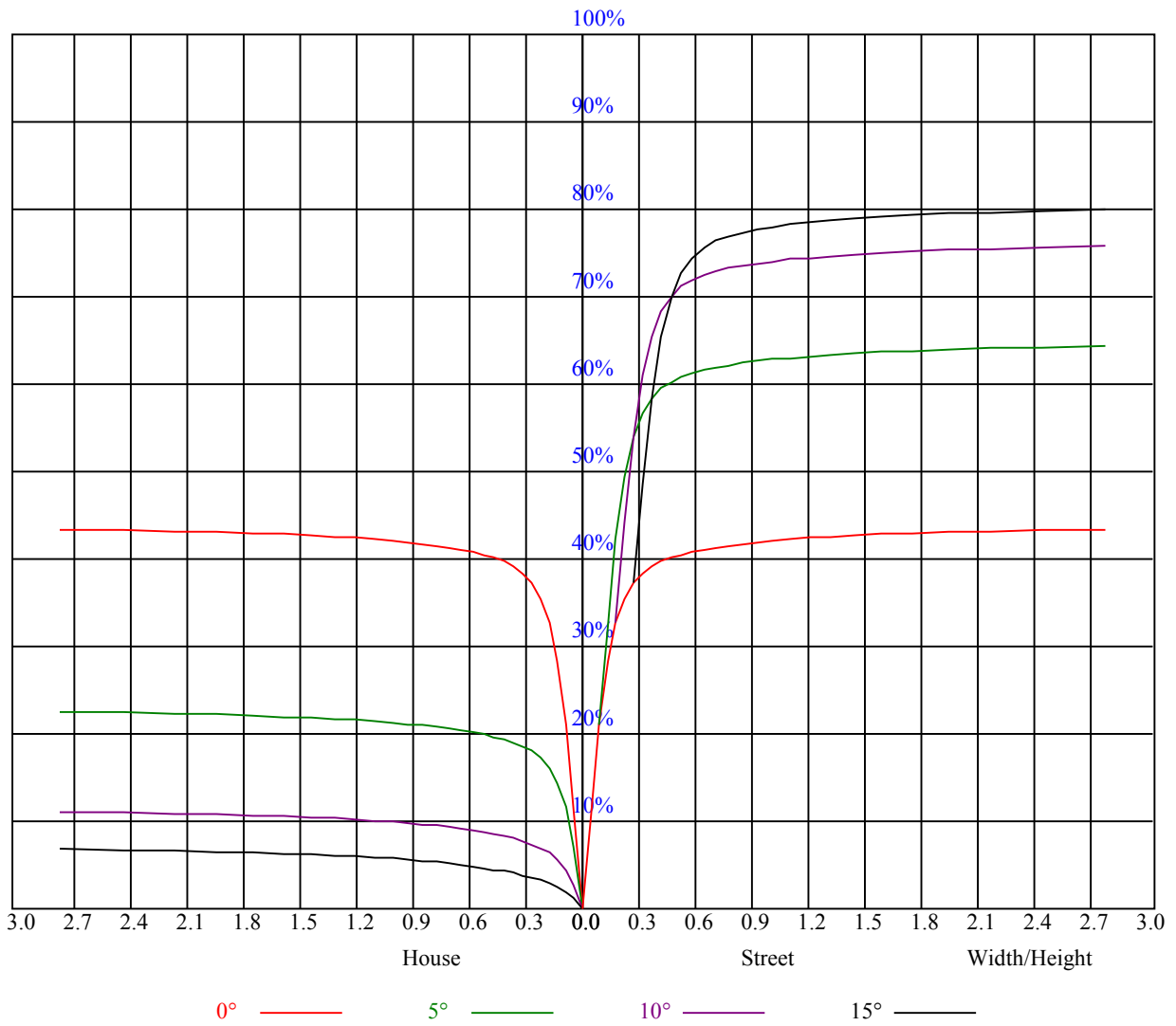
| Glare | Quality | Service Values Illuminance(lx) |      |      |       |       |       |       |       |
|-------|---------|--------------------------------|------|------|-------|-------|-------|-------|-------|
| 1.15  | A       | 2000                           | 1000 | 500  | <=300 |       |       |       |       |
| 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     |

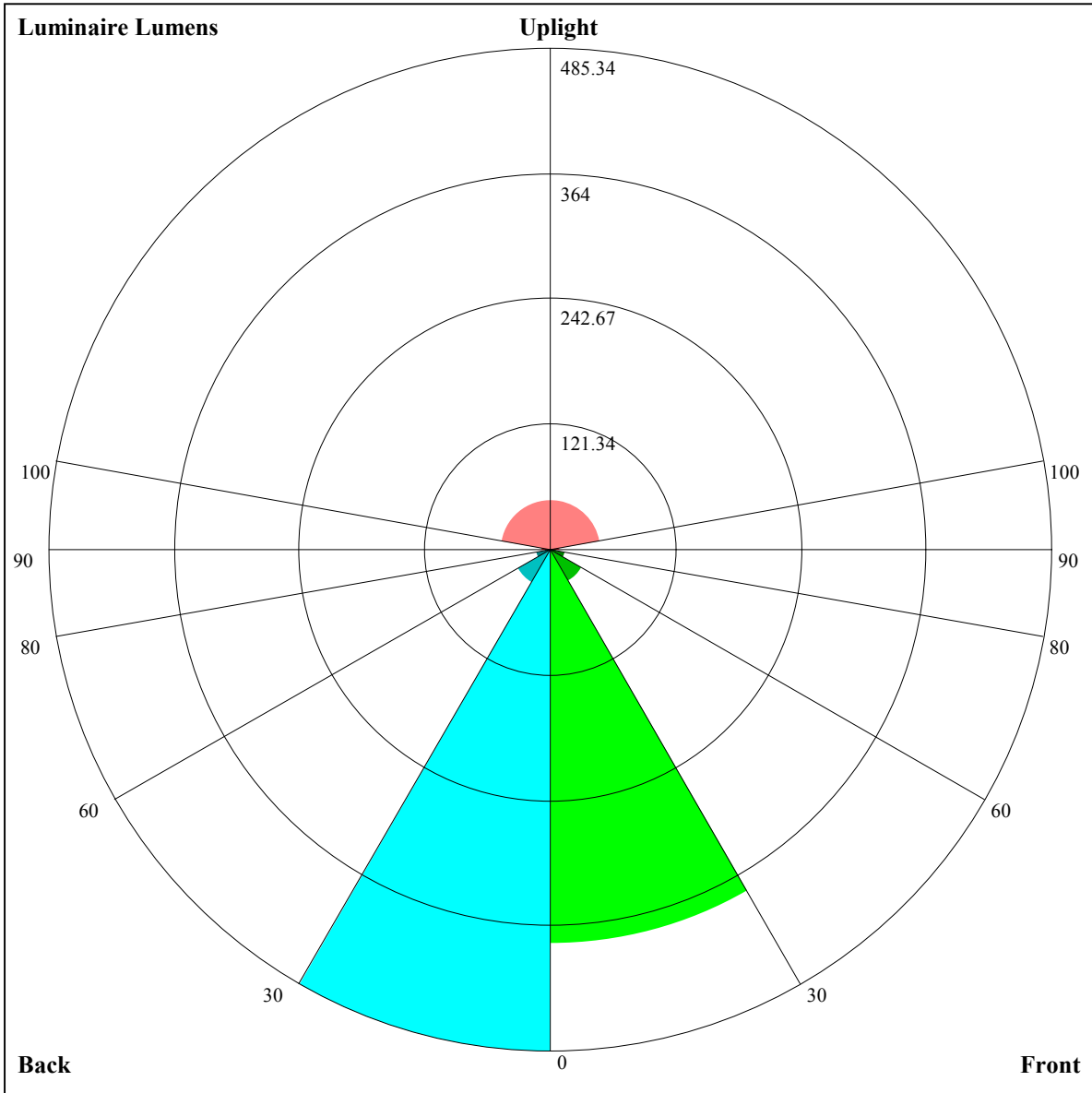
Luminance Limiting Curve





| 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     | 1.06                                    | 1.06 | 1.06 | 1.03 | 1.03 | 1.03 | 0.98 | 0.98 | 0.98 | 0.94 | 0.94 | 0.94 | 0.90 | 0.90 | 0.90 | 0.89 |
| 1     | 0.99                                    | 0.97 | 0.96 | 0.97 | 0.96 | 0.94 | 0.94 | 0.93 | 0.91 | 0.91 | 0.90 | 0.89 | 0.88 | 0.87 | 0.86 | 0.85 |
| 2     | 0.95                                    | 0.92 | 0.89 | 0.93 | 0.91 | 0.88 | 0.90 | 0.88 | 0.87 | 0.88 | 0.86 | 0.85 | 0.85 | 0.84 | 0.83 | 0.82 |
| 3     | 0.91                                    | 0.88 | 0.85 | 0.90 | 0.87 | 0.84 | 0.87 | 0.85 | 0.83 | 0.85 | 0.83 | 0.82 | 0.84 | 0.82 | 0.81 | 0.79 |
| 4     | 0.88                                    | 0.84 | 0.82 | 0.87 | 0.84 | 0.81 | 0.85 | 0.82 | 0.80 | 0.83 | 0.81 | 0.79 | 0.82 | 0.80 | 0.78 | 0.77 |
| 5     | 0.85                                    | 0.82 | 0.79 | 0.84 | 0.81 | 0.79 | 0.83 | 0.80 | 0.78 | 0.82 | 0.79 | 0.77 | 0.80 | 0.78 | 0.77 | 0.76 |
| 6     | 0.83                                    | 0.79 | 0.77 | 0.82 | 0.79 | 0.76 | 0.81 | 0.78 | 0.76 | 0.80 | 0.77 | 0.76 | 0.79 | 0.77 | 0.75 | 0.74 |
| 7     | 0.81                                    | 0.77 | 0.75 | 0.80 | 0.77 | 0.75 | 0.79 | 0.76 | 0.74 | 0.78 | 0.76 | 0.74 | 0.78 | 0.75 | 0.74 | 0.73 |
| 8     | 0.79                                    | 0.76 | 0.73 | 0.79 | 0.75 | 0.73 | 0.78 | 0.75 | 0.73 | 0.77 | 0.75 | 0.73 | 0.76 | 0.74 | 0.72 | 0.72 |
| 9     | 0.78                                    | 0.74 | 0.72 | 0.77 | 0.74 | 0.72 | 0.77 | 0.74 | 0.72 | 0.76 | 0.73 | 0.72 | 0.75 | 0.73 | 0.71 | 0.71 |
| 10    | 0.76                                    | 0.73 | 0.71 | 0.76 | 0.73 | 0.71 | 0.75 | 0.73 | 0.71 | 0.75 | 0.72 | 0.70 | 0.74 | 0.72 | 0.70 | 0.70 |





Luminaire Lumens:

FL=380.77,FM=34.8,FH=14.92,FVH=5.88

BL=485.34,BM=36.69,BH=15.28,BVH=6.11

UL=10.19,UH=48.48

BUG Rating:B1-U2-G0



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    | 10749.38 | 10402.88 | 9789.19  | 9010.13  | 7846.31  | 6625.69 | 5221.69 | 3979.69 | 3076.31 |
| 45.0   | 10774.13 | 10673.44 | 10364.63 | 9882.56  | 9070.88  | 8120.25 | 6825.94 | 5401.13 | 4247.44 |
| 90.0   | 10763.44 | 10726.88 | 10554.75 | 10083.94 | 9464.63  | 8614.13 | 7395.19 | 5967.00 | 4736.25 |
| 135.0  | 10530.00 | 10816.31 | 10849.50 | 10740.94 | 10340.44 | 9779.63 | 9040.50 | 7749.00 | 6529.50 |
| 180.0  | 10714.50 | 10878.75 | 10869.75 | 10632.94 | 10217.25 | 9570.94 | 8465.63 | 7305.75 | 6025.50 |
| 225.0  | 10774.13 | 10733.06 | 10506.94 | 9950.63  | 9239.63  | 8272.69 | 6810.19 | 5590.69 | 4439.81 |
| 270.0  | 10763.44 | 10579.50 | 10200.94 | 9642.94  | 8700.75  | 7472.81 | 6242.06 | 4880.81 | 3824.44 |
| 315.0  | 10530.00 | 10150.31 | 9541.13  | 8325.00  | 7340.06  | 6085.13 | 4438.69 | 3557.81 | 2730.94 |
| 360.0  | 10749.38 | 10402.88 | 9789.19  | 9010.13  | 7846.31  | 6625.69 | 5221.69 | 3979.69 | 3076.31 |
| C/γ(°) | 9.0      | 10.0     | 11.0     | 12.0     | 13.0     | 14.0    | 15.0    | 16.0    | 17.0    |
| 0.0    | 2295.00  | 1712.25  | 1338.19  | 1097.44  | 824.06   | 679.50  | 577.69  | 455.63  | 363.38  |
| 45.0   | 3196.13  | 2396.25  | 1858.50  | 1463.06  | 1109.25  | 903.94  | 746.44  | 604.69  | 492.75  |
| 90.0   | 3552.19  | 2662.88  | 2082.94  | 1609.31  | 1112.29  | 1031.91 | 830.42  | 689.91  | 577.13  |
| 135.0  | 5290.31  | 3912.19  | 3038.63  | 2387.81  | 1792.69  | 1441.69 | 1181.25 | 960.75  | 788.06  |
| 180.0  | 4794.75  | 3504.38  | 2729.25  | 2149.88  | 1620.56  | 1104.75 | 1078.48 | 881.16  | 722.42  |
| 225.0  | 3348.56  | 2526.75  | 1974.94  | 1510.88  | 1115.89  | 959.46  | 756.84  | 640.63  | 515.36  |
| 270.0  | 2867.63  | 2128.50  | 1639.13  | 1275.19  | 960.75   | 777.94  | 637.31  | 497.25  | 401.63  |
| 315.0  | 2005.31  | 1483.88  | 1095.47  | 926.49   | 719.61   | 598.78  | 498.15  | 396.79  | 311.34  |
| 360.0  | 2295.00  | 1712.25  | 1338.19  | 1097.44  | 824.06   | 679.50  | 577.69  | 455.63  | 363.38  |
| C/γ(°) | 18.0     | 19.0     | 20.0     | 21.0     | 22.0     | 23.0    | 24.0    | 25.0    | 26.0    |
| 0.0    | 301.50   | 251.55   | 178.99   | 145.18   | 117.28   | 99.79   | 86.40   | 78.86   | 73.86   |
| 45.0   | 407.25   | 331.88   | 290.25   | 206.78   | 169.09   | 132.92  | 110.76  | 95.18   | 83.59   |
| 90.0   | 457.59   | 374.63   | 306.11   | 235.46   | 189.90   | 154.35  | 127.13  | 104.01  | 90.17   |
| 135.0  | 661.50   | 536.63   | 430.31   | 355.50   | 288.00   | 219.60  | 175.56  | 140.06  | 117.06  |
| 180.0  | 605.08   | 492.64   | 407.25   | 326.19   | 260.16   | 209.81  | 165.94  | 132.64  | 111.66  |
| 225.0  | 402.92   | 334.80   | 268.88   | 198.17   | 163.86   | 132.41  | 103.33  | 91.52   | 81.96   |
| 270.0  | 326.25   | 285.19   | 194.06   | 153.00   | 119.98   | 96.81   | 83.59   | 74.48   | 68.51   |
| 315.0  | 250.65   | 195.47   | 156.43   | 125.16   | 103.73   | 90.17   | 80.44   | 75.21   | 71.49   |
| 360.0  | 301.50   | 251.55   | 178.99   | 145.18   | 117.28   | 99.79   | 86.40   | 78.86   | 73.86   |
| C/γ(°) | 27.0     | 28.0     | 29.0     | 30.0     | 31.0     | 32.0    | 33.0    | 34.0    | 35.0    |
| 0.0    | 70.37    | 68.18    | 66.04    | 64.13    | 62.21    | 59.01   | 55.35   | 48.60   | 40.50   |
| 45.0   | 76.44    | 71.66    | 67.33    | 65.03    | 62.21    | 59.57   | 55.97   | 53.10   | 44.83   |
| 90.0   | 80.21    | 73.29    | 68.91    | 66.26    | 64.58    | 62.16   | 60.58   | 57.54   | 55.01   |
| 135.0  | 100.18   | 83.76    | 75.21    | 70.76    | 66.32    | 65.31   | 62.89   | 60.81   | 57.54   |
| 180.0  | 95.57    | 79.82    | 74.87    | 68.23    | 65.53    | 63.56   | 59.85   | 58.56   | 55.29   |
| 225.0  | 73.74    | 68.74    | 65.14    | 62.33    | 59.85    | 57.15   | 53.89   | 50.40   | 45.56   |
| 270.0  | 64.01    | 60.81    | 58.84    | 56.31    | 54.96    | 52.93   | 51.41   | 47.87   | 43.31   |
| 315.0  | 69.13    | 66.49    | 63.62    | 61.65    | 58.67    | 55.01   | 50.63   | 43.76   | 36.45   |
| 360.0  | 70.37    | 68.18    | 66.04    | 64.13    | 62.21    | 59.01   | 55.35   | 48.60   | 40.50   |
| C/γ(°) | 36.0     | 37.0     | 38.0     | 39.0     | 40.0     | 41.0    | 42.0    | 43.0    | 44.0    |
| 0.0    | 34.65    | 30.94    | 29.98    | 29.19    | 28.69    | 28.86   | 29.64   | 30.88   | 31.67   |
| 45.0   | 38.70    | 33.30    | 29.36    | 27.79    | 27.06    | 26.55   | 26.61   | 27.45   | 28.91   |
| 90.0   | 49.16    | 40.39    | 33.64    | 30.43    | 29.93    | 29.70   | 29.53   | 30.49   | 31.39   |
| 135.0  | 54.79    | 50.40    | 44.49    | 36.17    | 29.81    | 28.74   | 28.74   | 28.86   | 29.81   |
| 180.0  | 51.86    | 45.39    | 37.52    | 30.66    | 28.18    | 28.29   | 28.35   | 28.58   | 29.08   |
| 225.0  | 39.04    | 33.02    | 28.74    | 26.94    | 26.33    | 26.16   | 26.44   | 27.23   | 27.79   |
| 270.0  | 36.96    | 31.89    | 29.25    | 29.08    | 29.19    | 29.42   | 29.87   | 30.38   | 31.11   |
| 315.0  | 31.67    | 29.14    | 27.96    | 27.11    | 26.94    | 27.62   | 28.46   | 29.36   | 30.04   |
| 360.0  | 34.65    | 30.94    | 29.98    | 29.19    | 28.69    | 28.86   | 29.64   | 30.88   | 31.67   |

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    | 32.29 | 32.29 | 32.46 | 31.56 | 30.60 | 28.24 | 26.33 | 24.98 | 23.29 |
| 45.0   | 29.42 | 29.59 | 29.36 | 29.48 | 29.25 | 27.90 | 26.38 | 24.47 | 22.33 |
| 90.0   | 31.95 | 32.23 | 32.06 | 31.73 | 30.99 | 30.77 | 28.80 | 26.55 | 25.31 |
| 135.0  | 30.21 | 30.60 | 30.83 | 30.77 | 30.60 | 30.66 | 30.49 | 28.13 | 25.99 |
| 180.0  | 29.59 | 29.93 | 29.98 | 29.81 | 29.48 | 29.53 | 29.19 | 27.17 | 25.82 |
| 225.0  | 28.18 | 28.41 | 28.69 | 28.86 | 28.63 | 26.66 | 25.37 | 24.75 | 24.58 |
| 270.0  | 31.56 | 31.73 | 31.44 | 31.16 | 29.36 | 27.68 | 26.55 | 25.71 | 24.02 |
| 315.0  | 30.26 | 30.38 | 30.32 | 29.19 | 27.06 | 25.31 | 24.36 | 23.29 | 22.16 |
| 360.0  | 32.29 | 32.29 | 32.46 | 31.56 | 30.60 | 28.24 | 26.33 | 24.98 | 23.29 |
| C/γ(°) | 54.0  | 55.0  | 56.0  | 57.0  | 58.0  | 59.0  | 60.0  | 61.0  | 62.0  |
| 0.0    | 22.22 | 21.26 | 20.48 | 19.63 | 18.73 | 17.94 | 17.10 | 16.65 | 16.31 |
| 45.0   | 21.26 | 20.31 | 19.01 | 18.00 | 17.04 | 16.43 | 15.86 | 15.36 | 14.79 |
| 90.0   | 24.98 | 22.11 | 20.48 | 19.58 | 18.51 | 17.66 | 16.93 | 16.09 | 15.75 |
| 135.0  | 24.75 | 24.47 | 22.44 | 20.93 | 19.63 | 18.79 | 17.66 | 16.65 | 15.86 |
| 180.0  | 25.76 | 23.91 | 22.73 | 21.38 | 20.19 | 19.35 | 18.45 | 17.33 | 16.54 |
| 225.0  | 23.06 | 21.49 | 20.48 | 19.41 | 18.51 | 17.55 | 16.88 | 15.92 | 15.36 |
| 270.0  | 22.95 | 21.88 | 20.48 | 19.41 | 18.62 | 17.49 | 16.76 | 16.09 | 15.53 |
| 315.0  | 20.59 | 19.63 | 18.73 | 17.78 | 16.76 | 16.03 | 15.30 | 14.68 | 14.40 |
| 360.0  | 22.22 | 21.26 | 20.48 | 19.63 | 18.73 | 17.94 | 17.10 | 16.65 | 16.31 |
| C/γ(°) | 63.0  | 64.0  | 65.0  | 66.0  | 67.0  | 68.0  | 69.0  | 70.0  | 71.0  |
| 0.0    | 15.92 | 15.41 | 15.30 | 15.36 | 15.47 | 15.81 | 16.43 | 16.65 | 16.26 |
| 45.0   | 14.57 | 13.95 | 13.44 | 13.16 | 12.99 | 12.94 | 13.28 | 13.50 | 13.61 |
| 90.0   | 15.47 | 14.96 | 14.40 | 14.01 | 13.73 | 13.56 | 13.67 | 14.01 | 14.34 |
| 135.0  | 15.47 | 15.19 | 14.96 | 14.68 | 14.29 | 13.78 | 13.61 | 13.44 | 13.61 |
| 180.0  | 16.09 | 15.58 | 15.41 | 15.08 | 14.79 | 14.79 | 14.79 | 14.85 | 15.19 |
| 225.0  | 14.91 | 14.63 | 14.18 | 13.84 | 13.56 | 13.33 | 13.11 | 13.16 | 13.44 |
| 270.0  | 15.08 | 14.91 | 14.46 | 14.23 | 14.12 | 14.01 | 14.01 | 14.34 | 14.63 |
| 315.0  | 14.06 | 13.39 | 13.16 | 12.88 | 12.71 | 12.83 | 13.28 | 13.67 | 13.50 |
| 360.0  | 15.92 | 15.41 | 15.30 | 15.36 | 15.47 | 15.81 | 16.43 | 16.65 | 16.26 |
| C/γ(°) | 72.0  | 73.0  | 74.0  | 75.0  | 76.0  | 77.0  | 78.0  | 79.0  | 80.0  |
| 0.0    | 15.75 | 15.64 | 16.03 | 16.99 | 16.99 | 15.86 | 14.46 | 12.83 | 11.93 |
| 45.0   | 13.78 | 13.95 | 14.06 | 15.64 | 15.86 | 16.03 | 15.02 | 13.95 | 12.99 |
| 90.0   | 14.29 | 14.51 | 15.02 | 16.54 | 16.99 | 16.37 | 15.30 | 14.06 | 13.44 |
| 135.0  | 13.78 | 14.12 | 14.51 | 14.63 | 17.66 | 17.27 | 16.93 | 15.02 | 14.12 |
| 180.0  | 15.53 | 15.41 | 15.53 | 15.75 | 17.72 | 18.28 | 17.21 | 14.96 | 13.84 |
| 225.0  | 13.61 | 13.61 | 13.50 | 14.96 | 16.09 | 16.03 | 14.85 | 14.06 | 12.94 |
| 270.0  | 14.51 | 14.23 | 14.06 | 14.46 | 15.92 | 15.69 | 14.29 | 12.83 | 11.25 |
| 315.0  | 13.16 | 12.94 | 14.06 | 13.73 | 15.13 | 14.57 | 12.21 | 10.69 | 10.69 |
| 360.0  | 15.75 | 15.64 | 16.03 | 16.99 | 16.99 | 15.86 | 14.46 | 12.83 | 11.93 |
| C/γ(°) | 81.0  | 82.0  | 83.0  | 84.0  | 85.0  | 86.0  | 87.0  | 88.0  | 89.0  |
| 0.0    | 11.76 | 11.25 | 10.80 | 11.19 | 11.36 | 11.36 | 11.31 | 10.29 | 9.56  |
| 45.0   | 12.60 | 11.76 | 10.97 | 11.53 | 12.04 | 12.32 | 12.15 | 11.81 | 10.29 |
| 90.0   | 13.44 | 12.38 | 11.42 | 11.53 | 11.53 | 11.93 | 12.04 | 11.98 | 10.29 |
| 135.0  | 13.39 | 12.71 | 12.54 | 11.64 | 11.42 | 11.59 | 12.04 | 12.21 | 11.87 |
| 180.0  | 12.94 | 12.38 | 12.26 | 11.53 | 10.74 | 11.14 | 11.70 | 11.76 | 11.08 |
| 225.0  | 12.60 | 12.32 | 12.04 | 11.59 | 11.70 | 12.15 | 12.09 | 11.81 | 9.96  |
| 270.0  | 10.35 | 10.01 | 8.78  | 8.44  | 8.16  | 7.99  | 7.93  | 8.04  | 7.82  |
| 315.0  | 10.80 | 11.03 | 10.80 | 11.31 | 11.53 | 11.48 | 11.42 | 10.13 | 9.45  |
| 360.0  | 11.76 | 11.25 | 10.80 | 11.19 | 11.36 | 11.36 | 11.31 | 10.29 | 9.56  |

Intensity data(cd)

|        |       |
|--------|-------|
| C/γ(°) | 90.0  |
| 0.0    | 8.94  |
| 45.0   | 9.96  |
| 90.0   | 9.79  |
| 135.0  | 10.07 |
| 180.0  | 9.68  |
| 225.0  | 9.62  |
| 270.0  | 7.71  |
| 315.0  | 8.94  |
| 360.0  | 8.94  |