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## Nata

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### Client:

LumCAT: 2-2008-M

Luminaire: 92.70.131.00

Report No: GC2019091909

Test No: NATA07

LampCAT: BRIDGELEX V13B

Lamp flux(lm): 1760.0

Number of Lamps: 1

Length(mm): 70

Phm Type: C

Voltage(V): 220.4000

Current(A): 0.0690

Power (W): 14.0200

PF: 0.9160

Ballast type: AC

Width(mm): 70

Height(mm): 0

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## Photometric Results

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Lumens(lm): 1587.28, Efficiency(%): 90.19% , Luminous Efficacy(lm/W): 113.22

Central intensity(cd): 3188.304, Maximum intensity(cd): 3188.304

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

Beam Angle(50%Imax): [C0/180]Total=37.8

[C90/270]Total=37.8

Field angle(10%Imax): [C0/180]Total=73.6

[C90/270]Total=73.6

Maximum s/h(1/2): C0\_180=0.63 C90\_270=0.63

Maximum s/h(1/4): C0\_180=0.62 C90\_270=0.62

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 : 99.677%

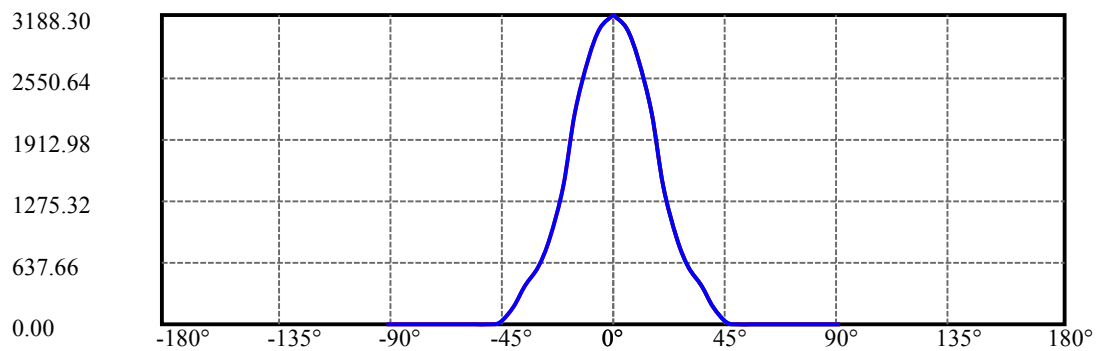
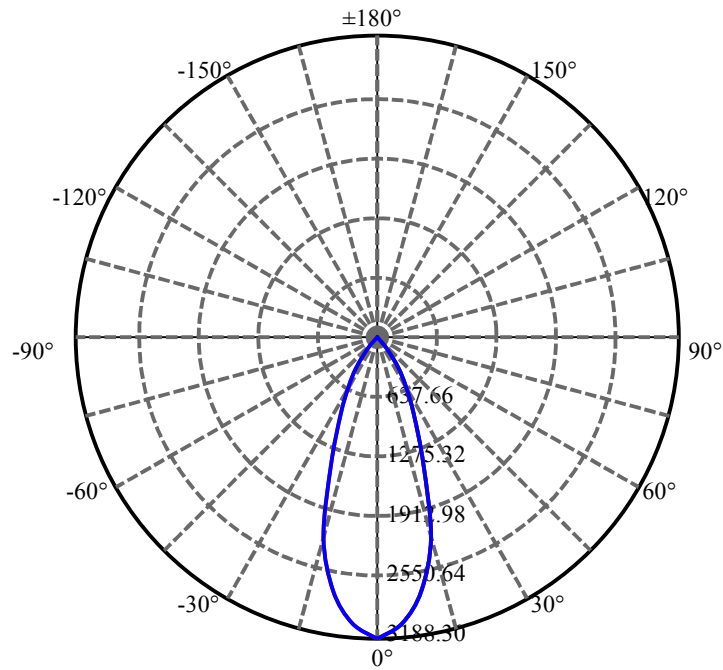
| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 0.0                | 3188.304      | 0.000       | 0         | .000%       | .000%      |
| 5.0                | 3045.498      | 74.523      | 74.523    | 4.234%      | 4.695%     |
| 10.0               | 2725.083      | 206.432     | 280.955   | 11.729%     | 17.700%    |
| 15.0               | 2177.233      | 290.802     | 571.757   | 16.523%     | 36.021%    |
| 20.0               | 1424.403      | 296.825     | 868.583   | 16.865%     | 54.722%    |
| 25.0               | 891.953       | 242.943     | 1111.526  | 13.804%     | 70.027%    |
| 30.0               | 602.727       | 189.153     | 1300.679  | 10.747%     | 81.944%    |
| 35.0               | 400.467       | 147.727     | 1448.406  | 8.394%      | 91.251%    |
| 40.0               | 168.357       | 94.904      | 1543.31   | 5.392%      | 97.230%    |
| 45.0               | 10.023        | 33.029      | 1576.338  | 1.877%      | 99.311%    |
| 50.0               | 4.229         | 2.880       | 1579.218  | .164%       | 99.492%    |
| 55.0               | 3.179         | 1.611       | 1580.829  | .092%       | 99.594%    |
| 60.0               | 2.570         | 1.329       | 1582.157  | .075%       | 99.677%    |
| 65.0               | 2.053         | 1.124       | 1583.281  | .064%       | 99.748%    |
| 70.0               | 1.740         | 0.961       | 1584.242  | .055%       | 99.809%    |
| 75.0               | 1.514         | 0.851       | 1585.092  | .048%       | 99.862%    |
| 80.0               | 1.351         | 0.767       | 1585.859  | .044%       | 99.911%    |
| 85.0               | 1.282         | 0.716       | 1586.575  | .041%       | 99.956%    |
| 90.0               | 1.288         | 0.704       | 1587.278  | .040%       | 100.000%   |

## ZONAL LUMEN SUMMARY

| Zone    | Lumens  | %Lamp  | %Fixt   |
|---------|---------|--------|---------|
| 0-30    | 1300.68 | 73.90% | 81.94%  |
| 0-40    | 1543.31 | 87.69% | 97.23%  |
| 0-60    | 1582.16 | 89.90% | 99.68%  |
| 0-90    | 1586.57 | 90.15% | 99.96%  |
| 0-120   | 1586.57 | 90.15% | 99.96%  |
| 0-180   | 1587.28 | 90.19% | 100.00% |
| 60-90   | 5.75    | 0.33%  | 0.36%   |
| 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%   |
| 0-29.18 | 1269.82 | 72.15% | 80.00%  |

## ZONAL LUMEN SUMMARY

|         |        |
|---------|--------|
| 0-10    | 280.96 |
| 10-20   | 587.63 |
| 20-30   | 432.10 |
| 30-40   | 242.63 |
| 40-50   | 35.91  |
| 50-60   | 2.94   |
| 60-70   | 2.08   |
| 70-80   | 1.62   |
| 80-90   | 0.72   |
| 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   |

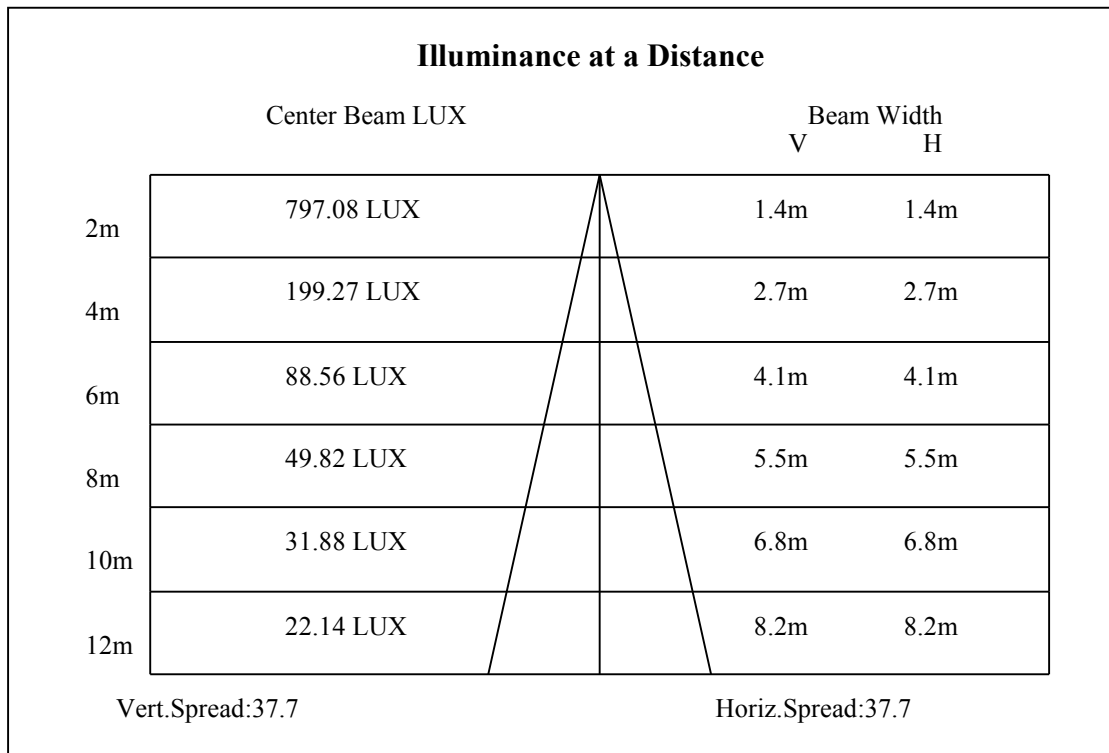
C0(Max): —————C0/C180: —————C90/C270: —————

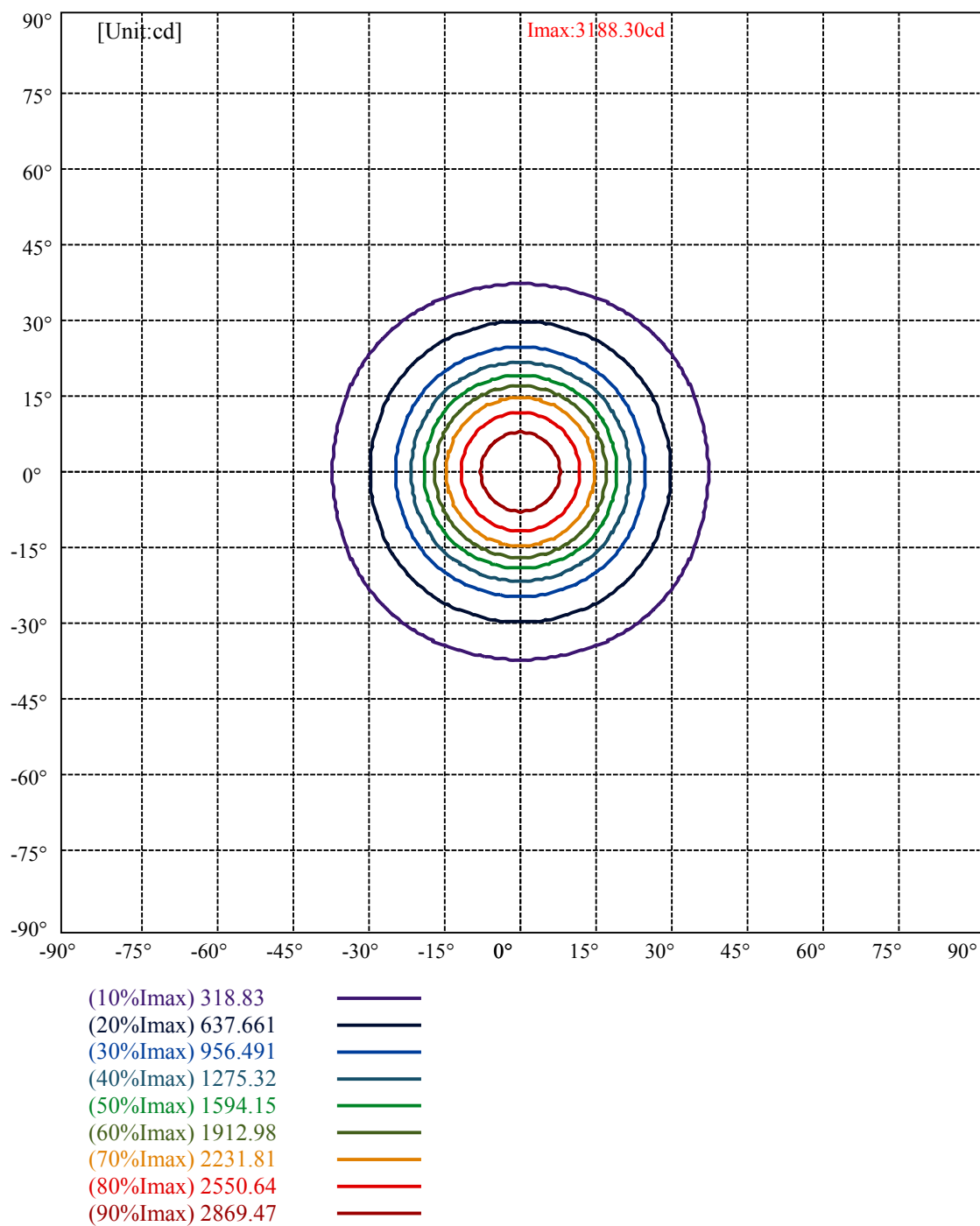
Field angle(10%Imax):C0/180Left:36.8 Right:36.8

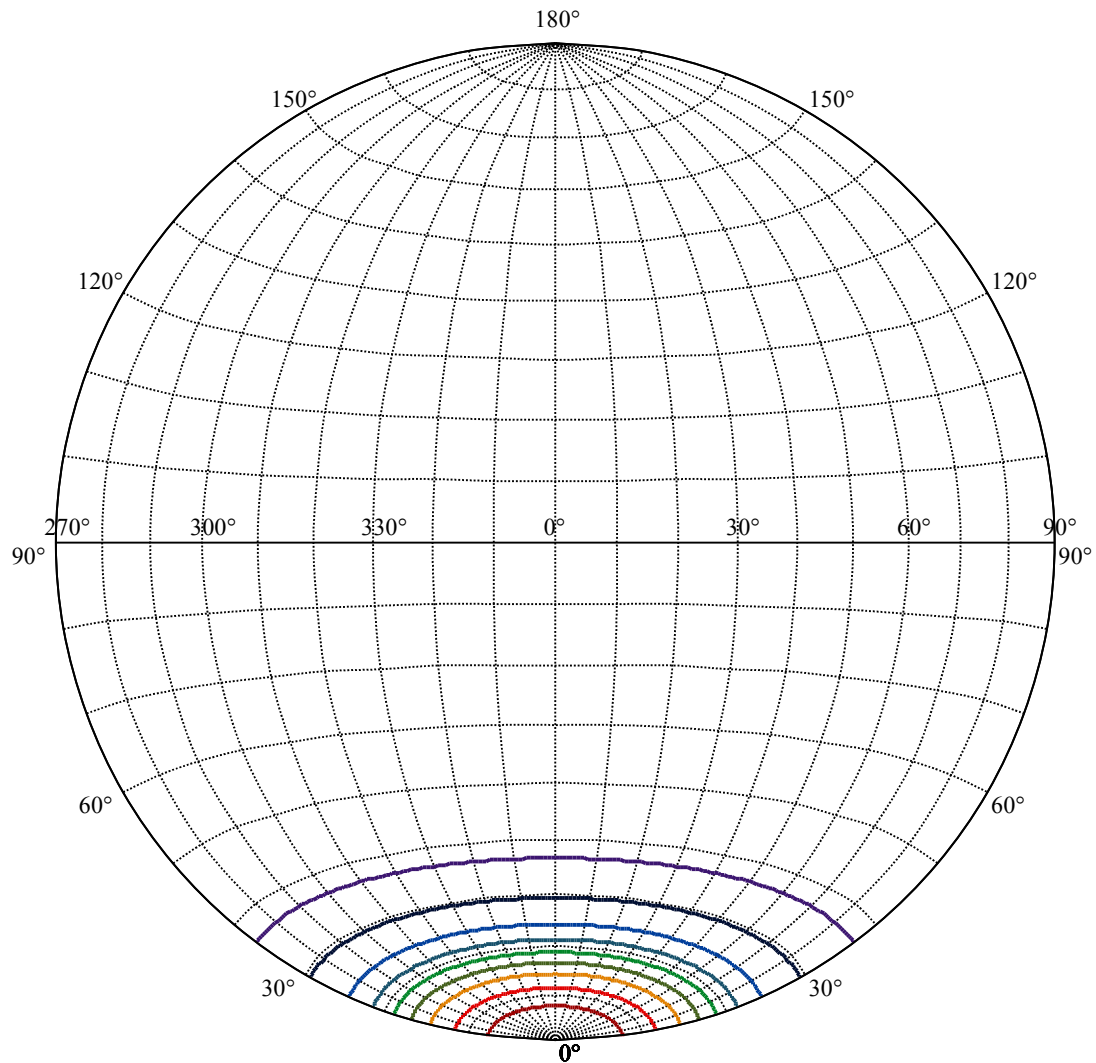
:C90/270Left:36.8 Right:36.8

Beam Angle(50%Imax):C0/180Left:18.9 Right:18.9

:C90/270Left:18.9 Right:18.9







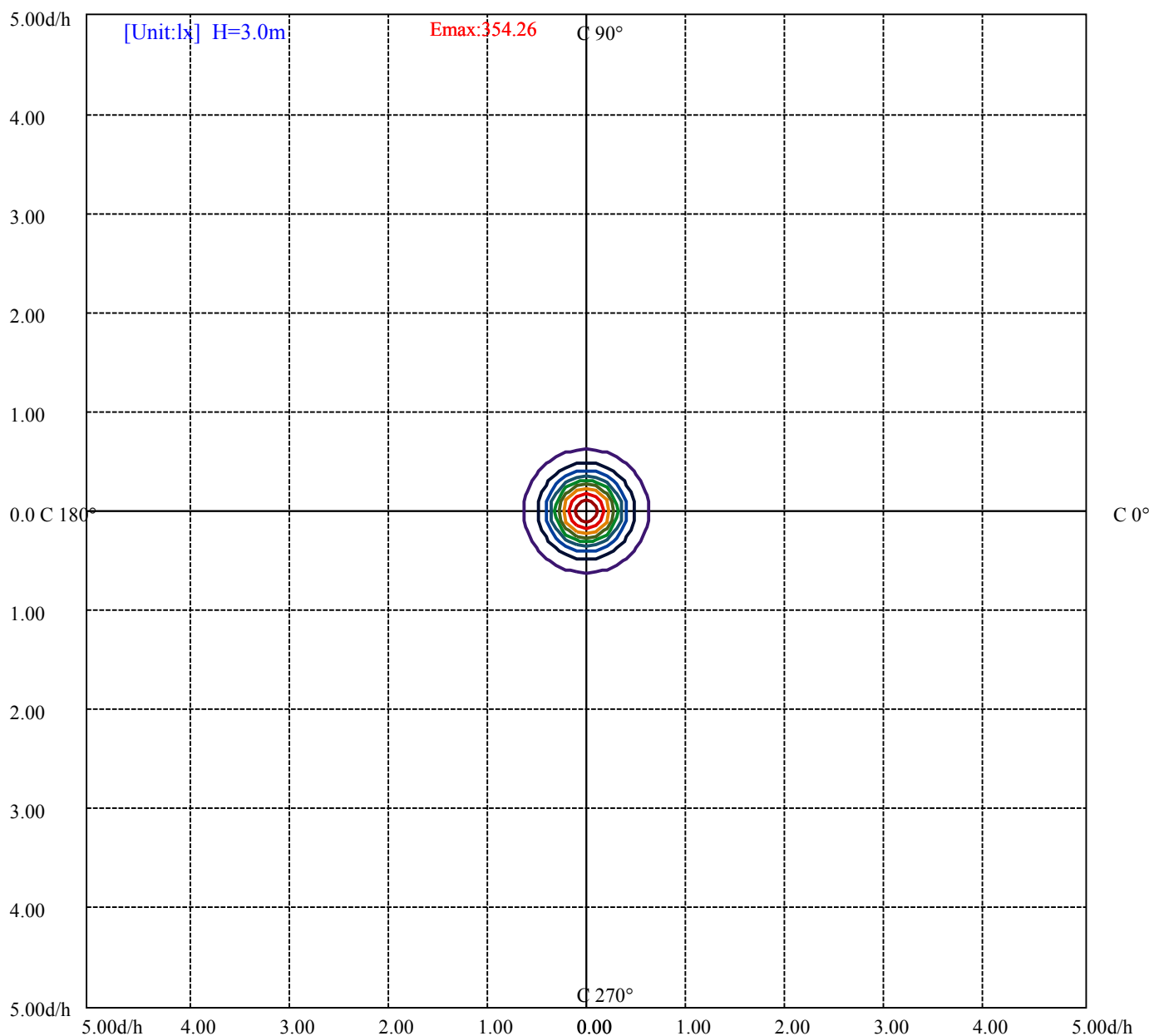
House

[Unit:cd]

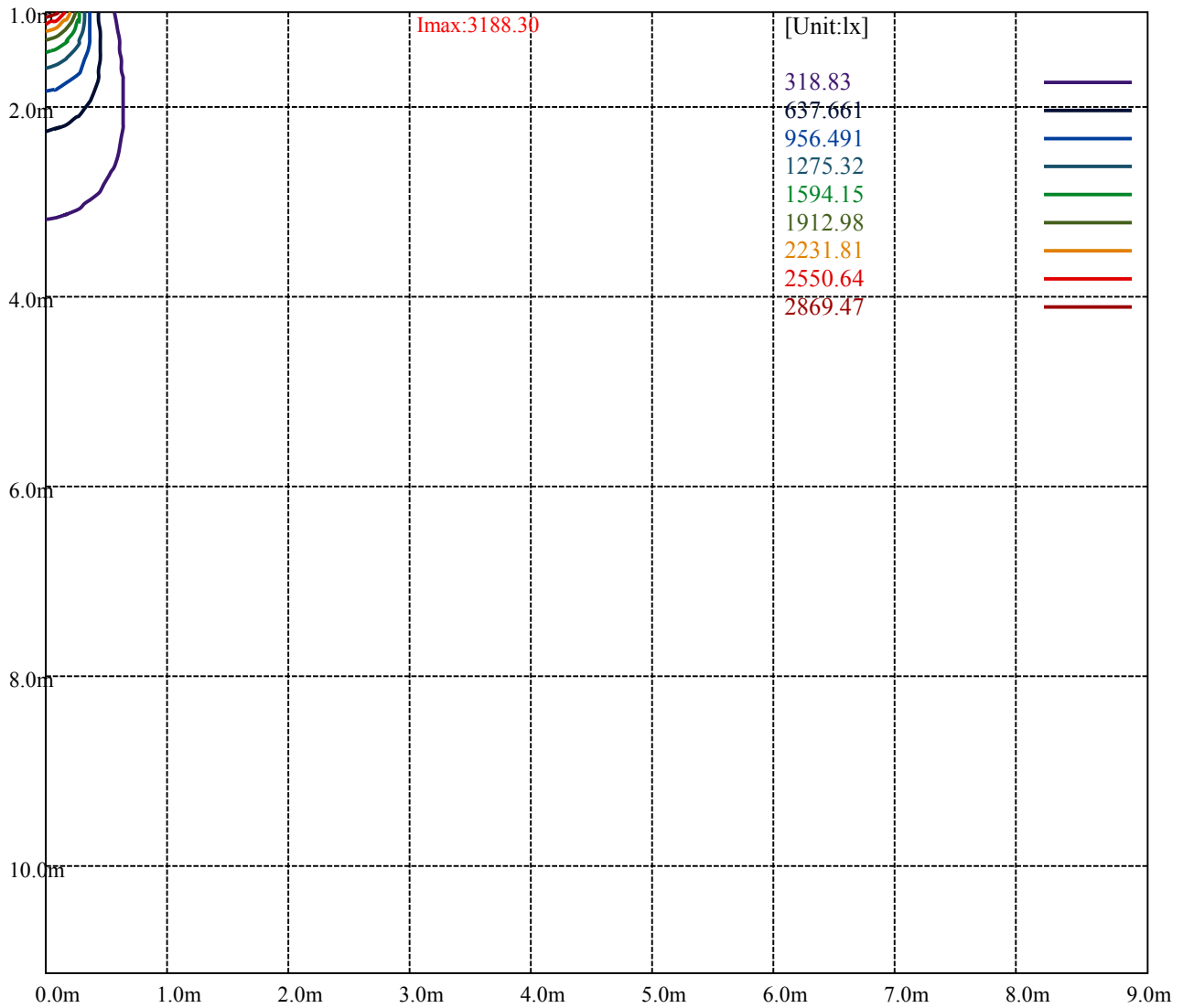
Road

**Imax:3188.30**

|           |         |   |
|-----------|---------|---|
| (10%Imax) | 318.83  | — |
| (20%Imax) | 637.661 | — |
| (30%Imax) | 956.491 | — |
| (40%Imax) | 1275.32 | — |
| (50%Imax) | 1594.15 | — |
| (60%Imax) | 1912.98 | — |
| (70%Imax) | 2231.81 | — |
| (80%Imax) | 2550.64 | — |
| (90%Imax) | 2869.47 | — |



|           |          |   |
|-----------|----------|---|
| (10%Emax) | 35.42555 | — |
| (20%Emax) | 70.8511  | — |
| (30%Emax) | 106.2767 | — |
| (40%Emax) | 141.7022 | — |
| (50%Emax) | 177.1278 | — |
| (60%Emax) | 212.5533 | — |
| (70%Emax) | 247.9789 | — |
| (80%Emax) | 283.4044 | — |
| (90%Emax) | 318.83   | — |



Luminance Table

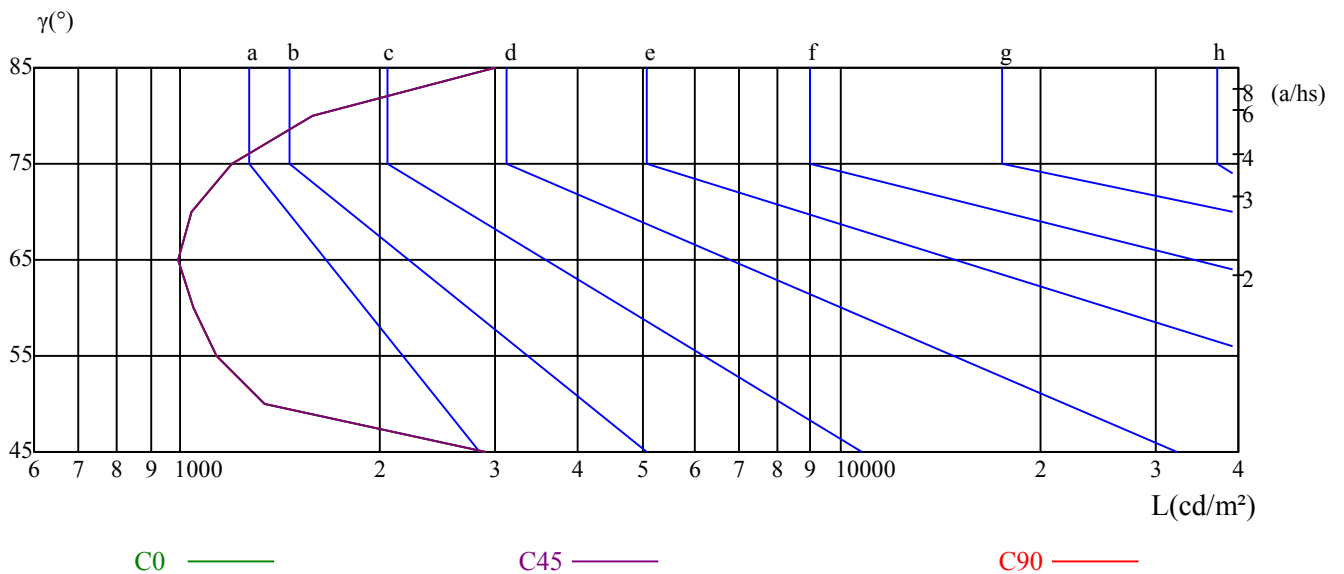
| $\gamma$ | 45   | 50   | 55   | 60   | 65  | 70   | 75   | 80   | 85   |
|----------|------|------|------|------|-----|------|------|------|------|
| C0       | 2893 | 1343 | 1131 | 1049 | 992 | 1038 | 1194 | 1588 | 3002 |
| C45      | 2893 | 1343 | 1131 | 1049 | 992 | 1038 | 1194 | 1588 | 3002 |
| C90      | 2893 | 1343 | 1131 | 1049 | 992 | 1038 | 1194 | 1588 | 3002 |

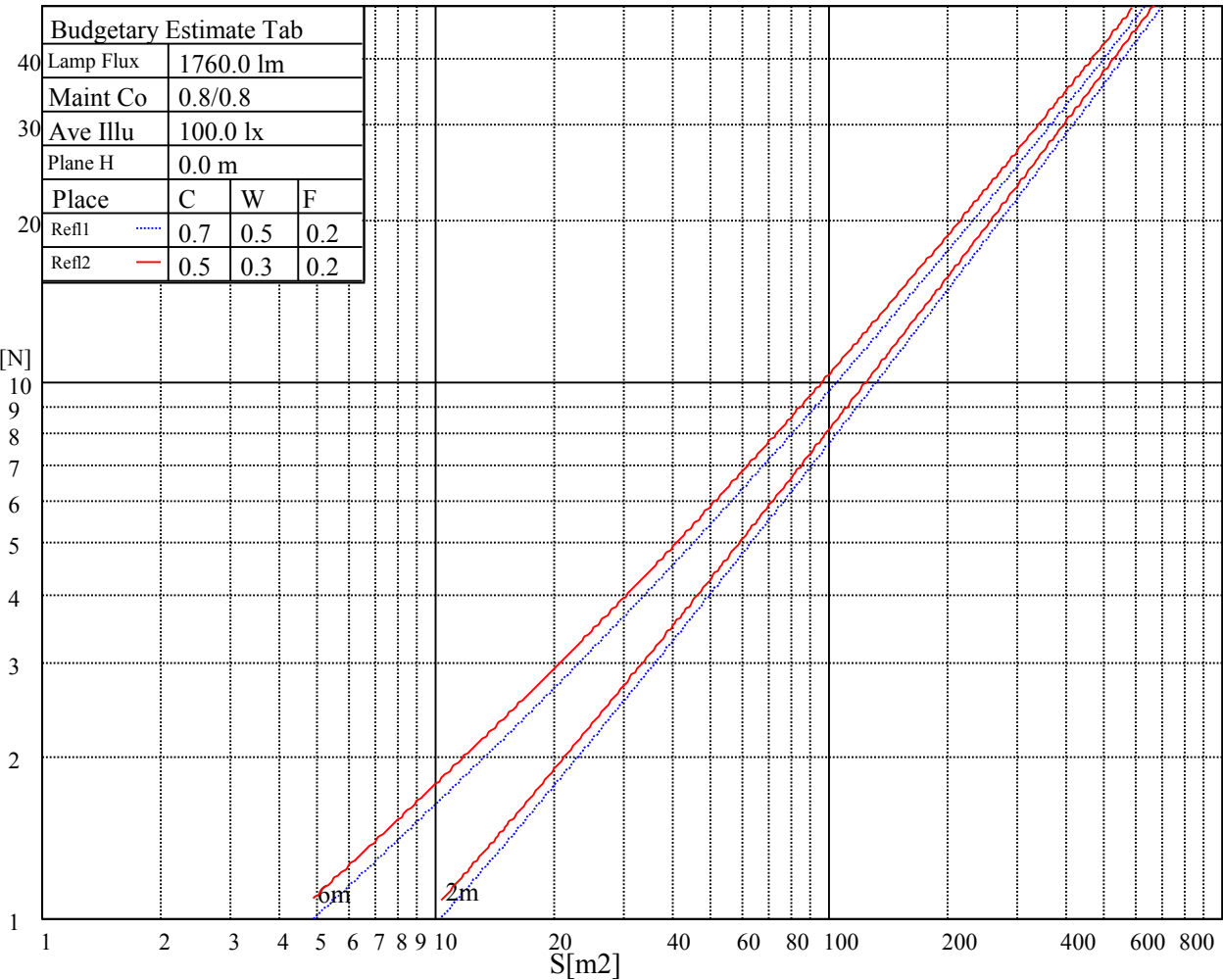
| L(Hor)(65) | L(Ver)(65) | L45(65) | L(Hor)(75) | L(Ver)(75) | L45(75) | L(Hor)(85) | L(Ver)(85) | L45(85) |
|------------|------------|---------|------------|------------|---------|------------|------------|---------|
| 992        | 992        | 992     | 1194       | 1194       | 1194    | 3002       | 3002       | 3002    |

Glare Table

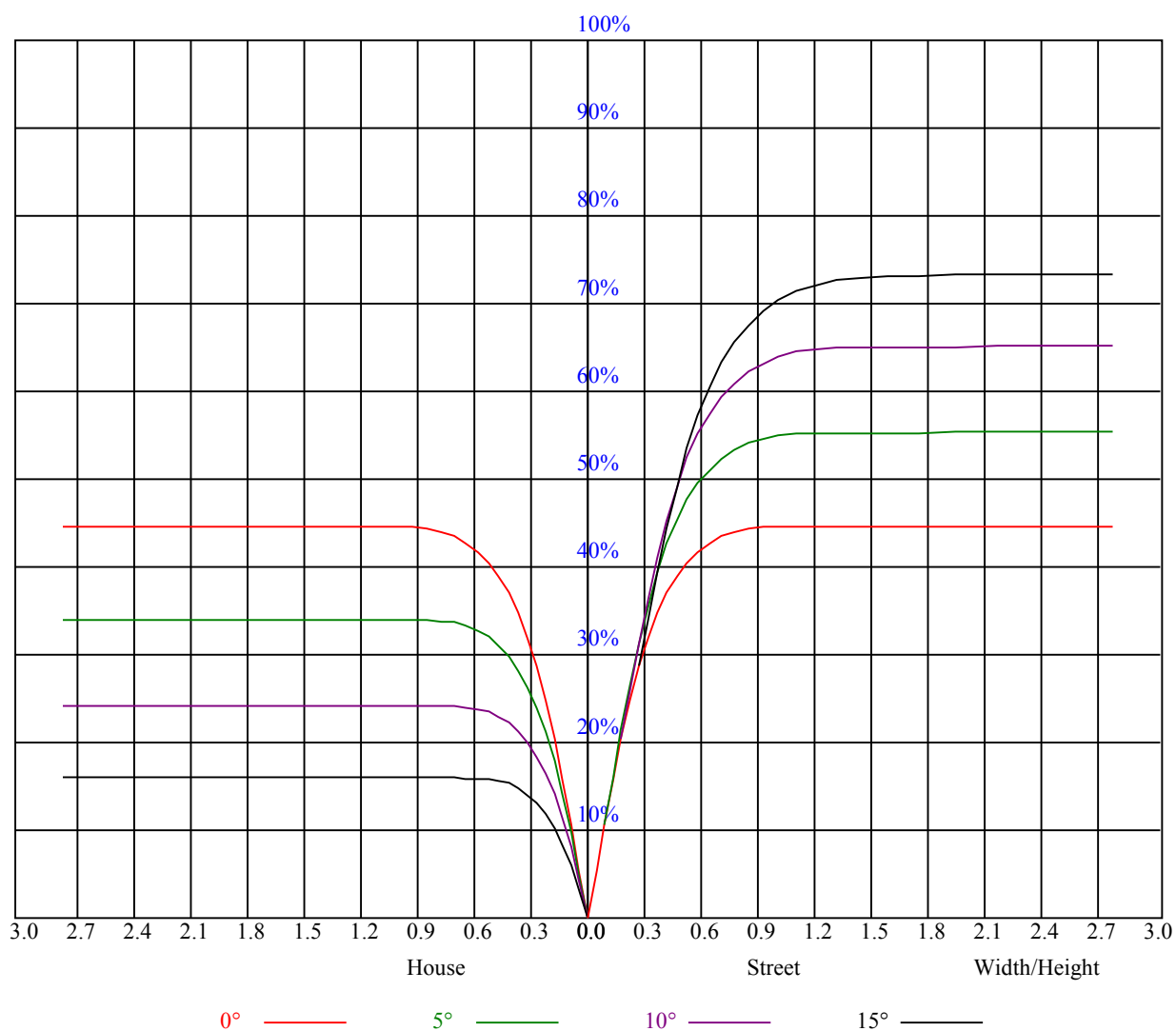
| Glare | Quality | Service Values Illuminance(lx) |      |      |            |            |            |            |            |
|-------|---------|--------------------------------|------|------|------------|------------|------------|------------|------------|
| 1.15  | A       | 2000            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

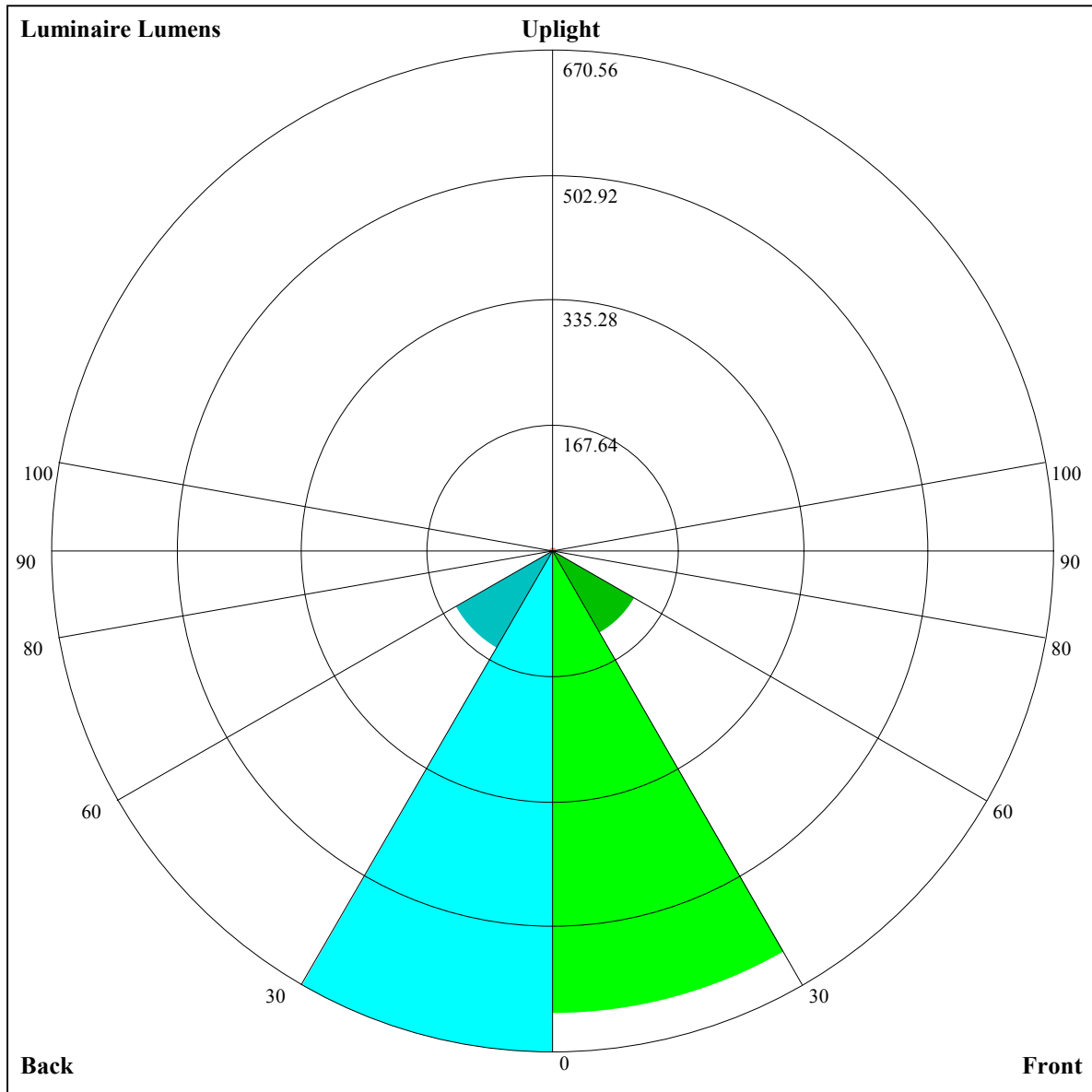
Luminance Limiting Curve





| 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                                    | 0.99 | 0.97 | 0.99 | 0.97 | 0.95 | 0.95 | 0.94 | 0.92 | 0.92 | 0.91 | 0.90 | 0.89 | 0.88 | 0.87 | 0.85 |
| 2     | 0.95                                    | 0.91 | 0.89 | 0.93 | 0.90 | 0.88 | 0.90 | 0.88 | 0.86 | 0.88 | 0.86 | 0.84 | 0.85 | 0.84 | 0.82 | 0.81 |
| 3     | 0.89                                    | 0.85 | 0.82 | 0.88 | 0.84 | 0.81 | 0.86 | 0.83 | 0.80 | 0.84 | 0.81 | 0.79 | 0.82 | 0.79 | 0.78 | 0.76 |
| 4     | 0.84                                    | 0.80 | 0.77 | 0.83 | 0.79 | 0.76 | 0.81 | 0.78 | 0.75 | 0.80 | 0.77 | 0.74 | 0.78 | 0.76 | 0.74 | 0.72 |
| 5     | 0.80                                    | 0.75 | 0.72 | 0.79 | 0.75 | 0.72 | 0.78 | 0.74 | 0.71 | 0.76 | 0.73 | 0.70 | 0.75 | 0.72 | 0.70 | 0.69 |
| 6     | 0.76                                    | 0.71 | 0.68 | 0.75 | 0.71 | 0.68 | 0.74 | 0.70 | 0.67 | 0.73 | 0.69 | 0.67 | 0.72 | 0.69 | 0.66 | 0.65 |
| 7     | 0.72                                    | 0.67 | 0.64 | 0.72 | 0.67 | 0.64 | 0.71 | 0.67 | 0.64 | 0.70 | 0.66 | 0.63 | 0.69 | 0.65 | 0.63 | 0.62 |
| 8     | 0.69                                    | 0.64 | 0.61 | 0.68 | 0.64 | 0.61 | 0.67 | 0.63 | 0.60 | 0.67 | 0.63 | 0.60 | 0.66 | 0.62 | 0.60 | 0.59 |
| 9     | 0.66                                    | 0.61 | 0.58 | 0.65 | 0.61 | 0.58 | 0.65 | 0.60 | 0.58 | 0.64 | 0.60 | 0.57 | 0.63 | 0.60 | 0.57 | 0.56 |
| 10    | 0.63                                    | 0.58 | 0.55 | 0.63 | 0.58 | 0.55 | 0.62 | 0.58 | 0.55 | 0.61 | 0.57 | 0.55 | 0.61 | 0.57 | 0.55 | 0.54 |





Luminaire Lumens:

FL=620.04,FM=126.85,FH=1.85,FVH=0.71

BL=670.56,BM=150.03,BH=1.9,BVH=0.71

UL=1.4,UH=6.69

BUG Rating:B2-U1-G0

| Intensity data(cd) |         |         |         |         |         |         |        |        |        | Appendix Page: 15 Total:15 |  |
|--------------------|---------|---------|---------|---------|---------|---------|--------|--------|--------|----------------------------|--|
| C/γ(°)             | 0.0     | 5.0     | 10.0    | 15.0    | 20.0    | 25.0    | 30.0   | 35.0   | 40.0   |                            |  |
| 0.0                | 3185.64 | 2942.02 | 2532.74 | 1900.73 | 926.40  | 699.39  | 548.95 | 316.15 | 20.84  |                            |  |
| 45.0               | 3224.61 | 3014.41 | 2660.35 | 2187.96 | 1505.83 | 862.22  | 589.37 | 374.99 | 268.72 |                            |  |
| 90.0               | 3138.30 | 2864.06 | 2445.50 | 1815.81 | 905.28  | 690.67  | 532.62 | 219.58 | 14.80  |                            |  |
| 135.0              | 3204.66 | 3075.20 | 2753.62 | 2207.92 | 1522.08 | 916.98  | 619.53 | 435.31 | 284.03 |                            |  |
| 180.0              | 3185.64 | 3147.59 | 2915.10 | 2417.20 | 1768.48 | 1084.49 | 643.20 | 510.95 | 280.32 |                            |  |
| 225.0              | 3224.61 | 3111.39 | 2811.63 | 2259.89 | 1534.14 | 874.42  | 615.63 | 412.48 | 132.39 |                            |  |
| 270.0              | 3138.30 | 3197.24 | 2978.21 | 2505.36 | 1893.77 | 1203.29 | 694.70 | 540.18 | 270.58 |                            |  |
| 315.0              | 3204.66 | 3012.09 | 2703.51 | 2123.00 | 1339.25 | 804.17  | 577.81 | 394.10 | 75.17  |                            |  |
| 360.0              | 3185.64 | 2942.02 | 2532.74 | 1900.73 | 926.40  | 699.39  | 548.95 | 316.15 | 20.84  |                            |  |
| C/γ(°)             | 45.0    | 50.0    | 55.0    | 60.0    | 65.0    | 70.0    | 75.0   | 80.0   | 85.0   |                            |  |
| 0.0                | 5.71    | 3.53    | 2.69    | 2.18    | 1.86    | 1.58    | 1.48   | 1.30   | 1.30   |                            |  |
| 45.0               | 8.07    | 3.90    | 3.06    | 2.46    | 2.00    | 1.72    | 1.53   | 1.39   | 1.25   |                            |  |
| 90.0               | 5.80    | 3.94    | 2.97    | 2.41    | 1.90    | 1.67    | 1.44   | 1.30   | 1.35   |                            |  |
| 135.0              | 11.83   | 4.50    | 3.34    | 2.69    | 2.09    | 1.72    | 1.48   | 1.35   | 1.30   |                            |  |
| 180.0              | 12.11   | 4.36    | 3.29    | 2.69    | 2.09    | 1.81    | 1.53   | 1.35   | 1.25   |                            |  |
| 225.0              | 8.40    | 4.08    | 3.16    | 2.51    | 2.00    | 1.67    | 1.53   | 1.35   | 1.25   |                            |  |
| 270.0              | 20.84   | 5.43    | 3.90    | 3.11    | 2.46    | 2.04    | 1.72   | 1.48   | 1.30   |                            |  |
| 315.0              | 7.42    | 4.08    | 3.02    | 2.51    | 2.04    | 1.72    | 1.39   | 1.30   | 1.25   |                            |  |
| 360.0              | 5.71    | 3.53    | 2.69    | 2.18    | 1.86    | 1.58    | 1.48   | 1.30   | 1.30   |                            |  |
| C/γ(°)             | 90.0    |         |         |         |         |         |        |        |        |                            |  |
| 0.0                | 1.30    |         |         |         |         |         |        |        |        |                            |  |
| 45.0               | 1.35    |         |         |         |         |         |        |        |        |                            |  |
| 90.0               | 1.25    |         |         |         |         |         |        |        |        |                            |  |
| 135.0              | 1.25    |         |         |         |         |         |        |        |        |                            |  |
| 180.0              | 1.35    |         |         |         |         |         |        |        |        |                            |  |
| 225.0              | 1.21    |         |         |         |         |         |        |        |        |                            |  |
| 270.0              | 1.25    |         |         |         |         |         |        |        |        |                            |  |
| 315.0              | 1.35    |         |         |         |         |         |        |        |        |                            |  |
| 360.0              | 1.30    |         |         |         |         |         |        |        |        |                            |  |