

---

Nata

---

LumCAT: 3-2095-M  
Luminaire: 92.70.136.00  
Report No: GC2017082803  
Test No: NT-0010  
LampCAT: CREE CXA3050  
Lamp flux(lm): 3994.0  
Number of Lamps: 1  
Length(mm): 78  
Phm Type: C

Voltage(V): 36.7000  
Current(A): 1.0000  
Power (W): 36.7000  
PF: 0.0000  
Ballast type: DC  
Width(mm): 78  
Height(mm): 0

---

Photometric Results

---

Lumens(lm): 3519.69  
Efficiency(%): 88.12%  
Lumens(lm)/Power(W): 95.90  
Central intensity(cd): 5888.695  
Maximum intensity(cd): 5888.695  
Angle of maximum intensity: C=0.0  $\gamma$ =0.0  
Beam Angle(50%Imax): [C0/180]Total=44.4  
                                  [C90/270]Total=44.4  
Field angle(10%Imax): [C0/180]Total=74.5  
                                  [C90/270]Total=74.5  
Maximum s/h(1/2): C0\_180=0.70 C90\_270=0.70  
Maximum s/h(1/4): C0\_180=0.73 C90\_270=0.73  
Up flux rate of lamp(%): 0.00%  
Down flux rate of lamp(%): 88.12%  
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%

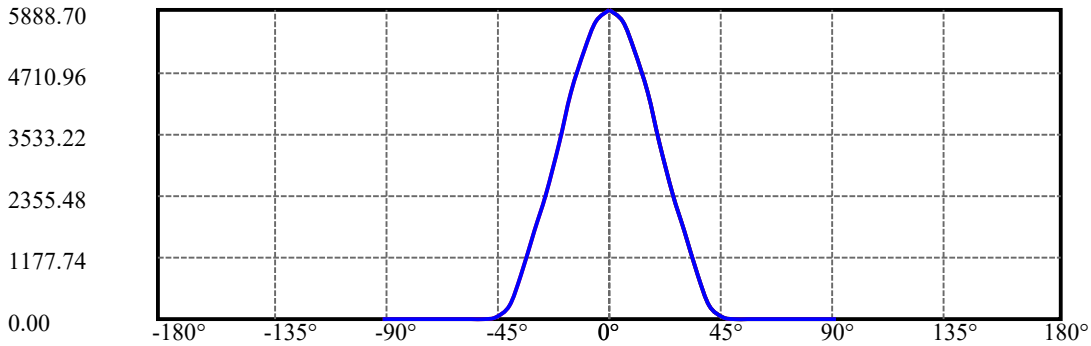
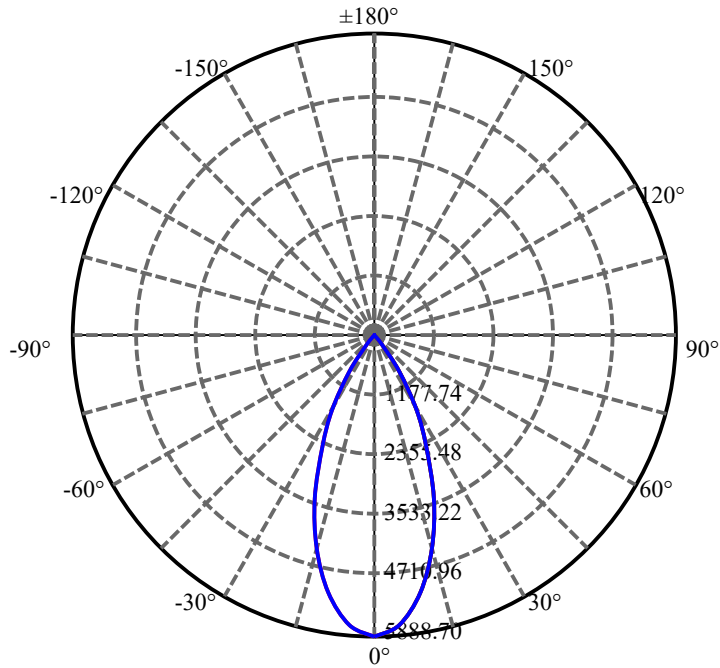
| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 0.0                | 5888.695      | 0.000       | 0         | .000%       | .000%      |
| 5.0                | 5681.614      | 138.320     | 138.32    | 3.463%      | 3.930%     |
| 10.0               | 5119.351      | 386.385     | 524.704   | 9.674%      | 14.908%    |
| 15.0               | 4328.397      | 560.434     | 1085.138  | 14.032%     | 30.831%    |
| 20.0               | 3375.783      | 634.933     | 1720.071  | 15.897%     | 48.870%    |
| 25.0               | 2391.581      | 604.890     | 2324.961  | 15.145%     | 66.056%    |
| 30.0               | 1672.613      | 514.327     | 2839.288  | 12.877%     | 80.669%    |
| 35.0               | 855.989       | 372.354     | 3211.643  | 9.323%      | 91.248%    |
| 40.0               | 257.533       | 185.783     | 3397.426  | 4.652%      | 96.526%    |
| 45.0               | 26.166        | 52.529      | 3449.955  | 1.315%      | 98.019%    |
| 50.0               | 18.058        | 8.936       | 3458.891  | .224%       | 98.273%    |
| 55.0               | 16.613        | 7.539       | 3466.43   | .189%       | 98.487%    |
| 60.0               | 15.760        | 7.483       | 3473.913  | .187%       | 98.699%    |
| 65.0               | 15.106        | 7.504       | 3481.416  | .188%       | 98.913%    |
| 70.0               | 14.673        | 7.540       | 3488.956  | .189%       | 99.127%    |
| 75.0               | 14.390        | 7.597       | 3496.553  | .190%       | 99.343%    |
| 80.0               | 14.266        | 7.668       | 3504.221  | .192%       | 99.561%    |
| 85.0               | 14.198        | 7.734       | 3511.955  | .194%       | 99.780%    |
| 90.0               | 14.046        | 7.733       | 3519.688  | .194%       | 100.000%   |

ZONAL LUMEN SUMMARY

| Zone    | Lumens  | %Lamp  | %Fixt   |
|---------|---------|--------|---------|
| 0-30    | 2839.29 | 71.09% | 80.67%  |
| 0-40    | 3397.43 | 85.06% | 96.53%  |
| 0-60    | 3473.91 | 86.98% | 98.70%  |
| 0-90    | 3511.96 | 87.93% | 99.78%  |
| 0-120   | 3511.96 | 87.93% | 99.78%  |
| 0-180   | 3519.69 | 88.12% | 100.00% |
| 60-90   | 45.53   | 1.14%  | 1.29%   |
| 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%   |
| 0-29.77 | 2815.75 | 70.50% | 80.00%  |

ZONAL LUMEN SUMMARY

|         |         |
|---------|---------|
| 0-10    | 524.70  |
| 10-20   | 1195.37 |
| 20-30   | 1119.22 |
| 30-40   | 558.14  |
| 40-50   | 61.47   |
| 50-60   | 15.02   |
| 60-70   | 15.04   |
| 70-80   | 15.26   |
| 80-90   | 7.73    |
| 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    |



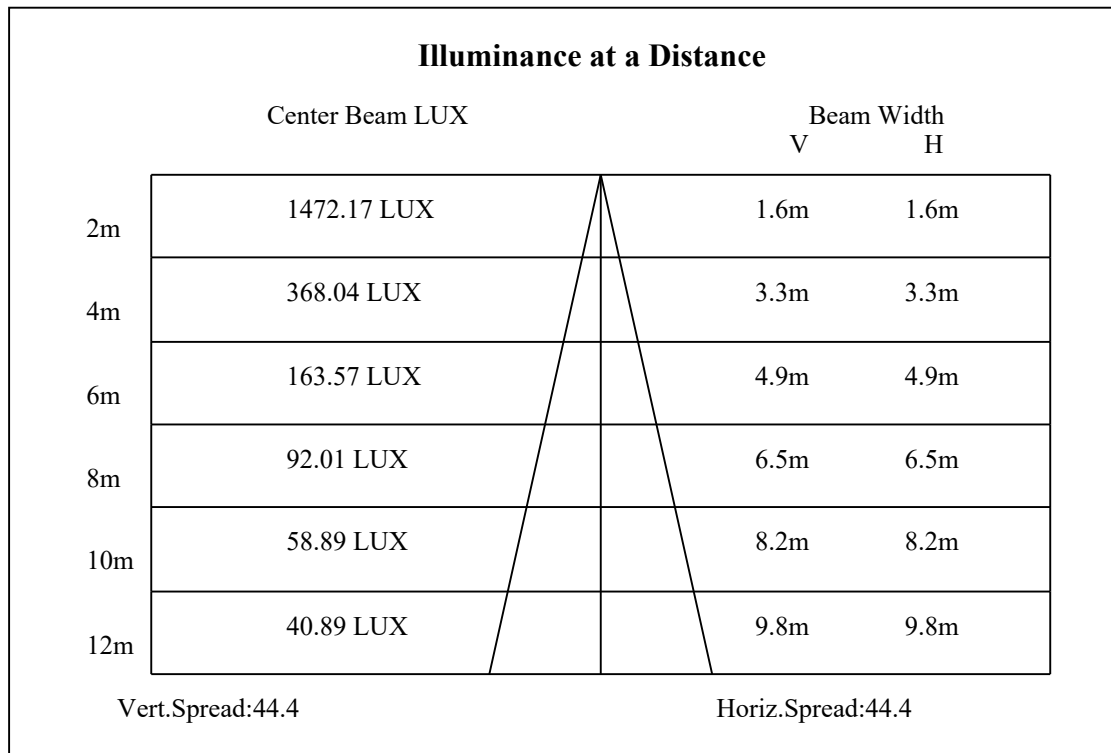
C0(Max): —————

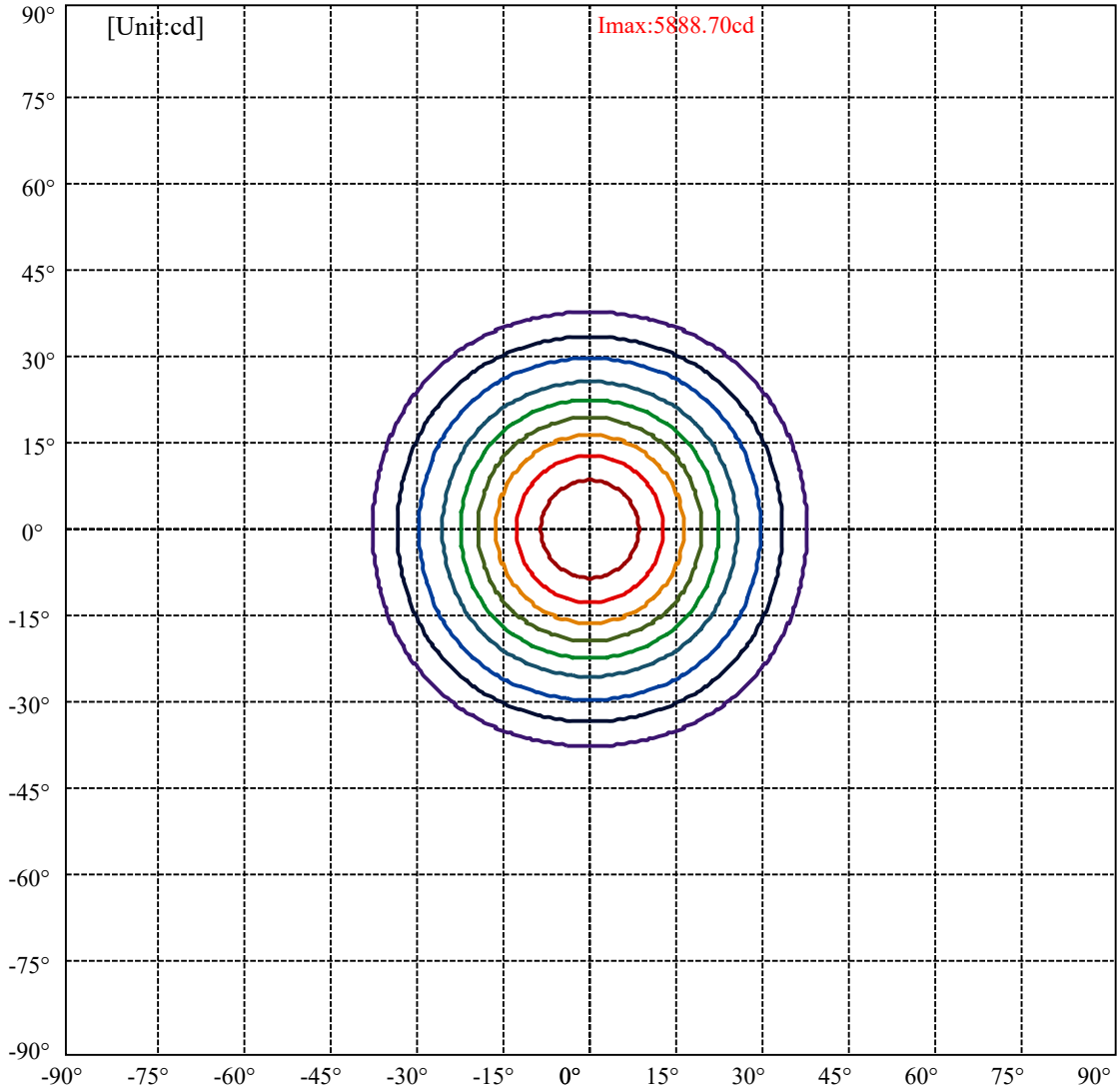
C0/C180: —————

C90/C270: —————

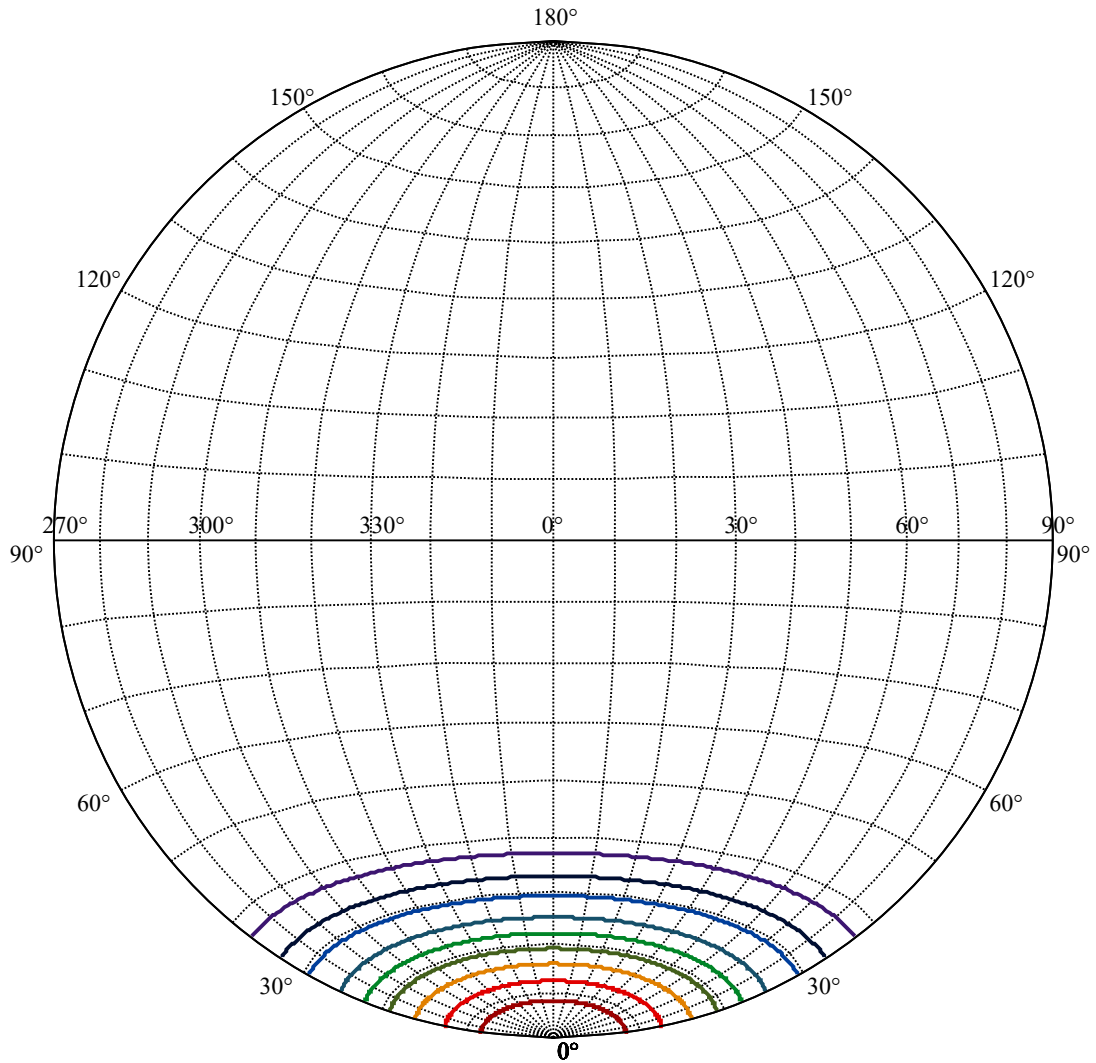
Field angle(10%Imax):C0/180Left:37.2 Right:37.2  
:C90/270Left:37.2 Right:37.2

Beam Angle(50%Imax):C0/180Left:22.2 Right:22.2  
:C90/270Left:22.2 Right:22.2





|                   |   |
|-------------------|---|
| (10%Imax) 588.87  | — |
| (20%Imax) 1177.74 | — |
| (30%Imax) 1766.61 | — |
| (40%Imax) 2355.48 | — |
| (50%Imax) 2944.35 | — |
| (60%Imax) 3533.22 | — |
| (70%Imax) 4122.09 | — |
| (80%Imax) 4710.96 | — |
| (90%Imax) 5299.83 | — |



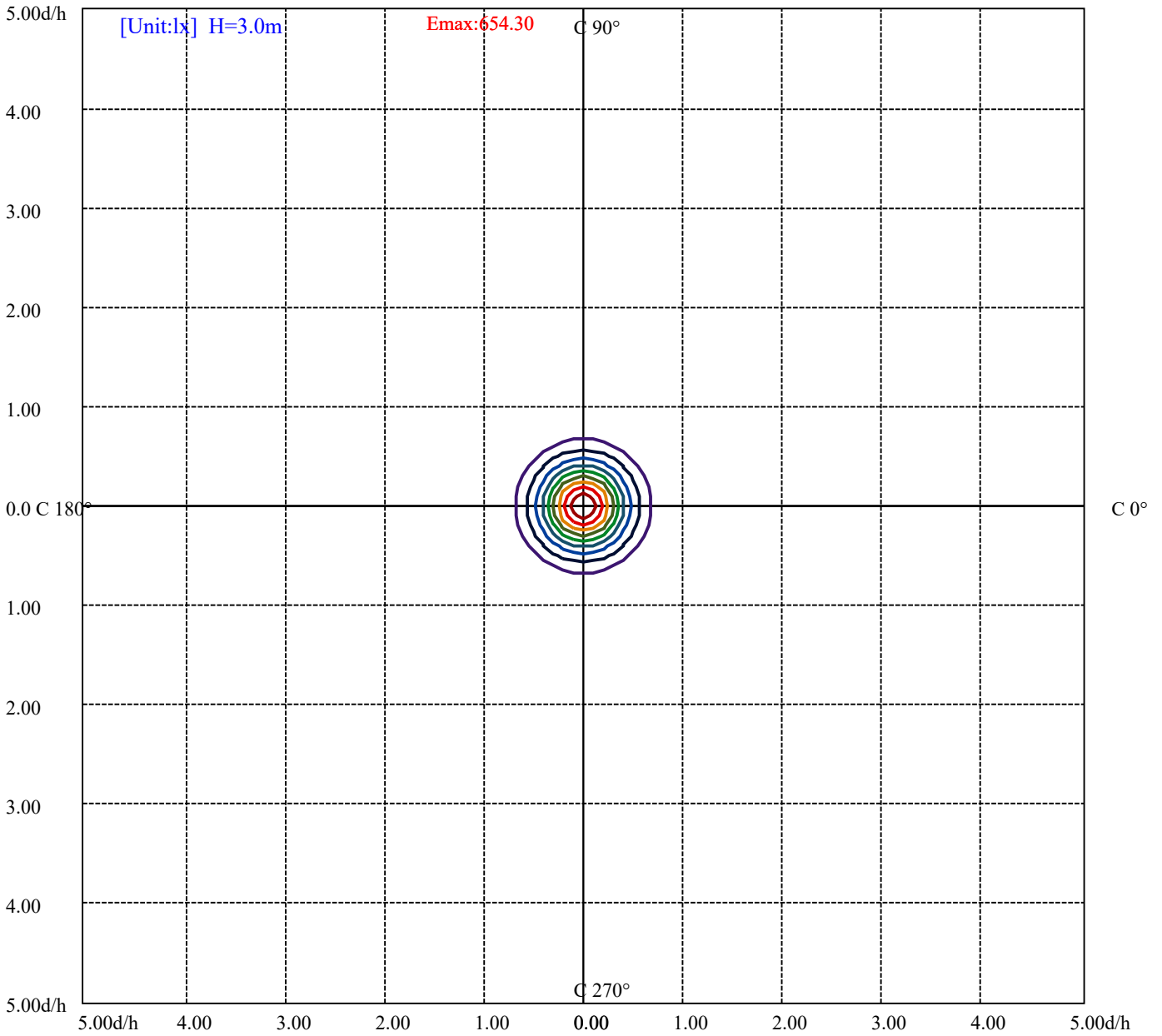
House

[Unit:cd]

Road

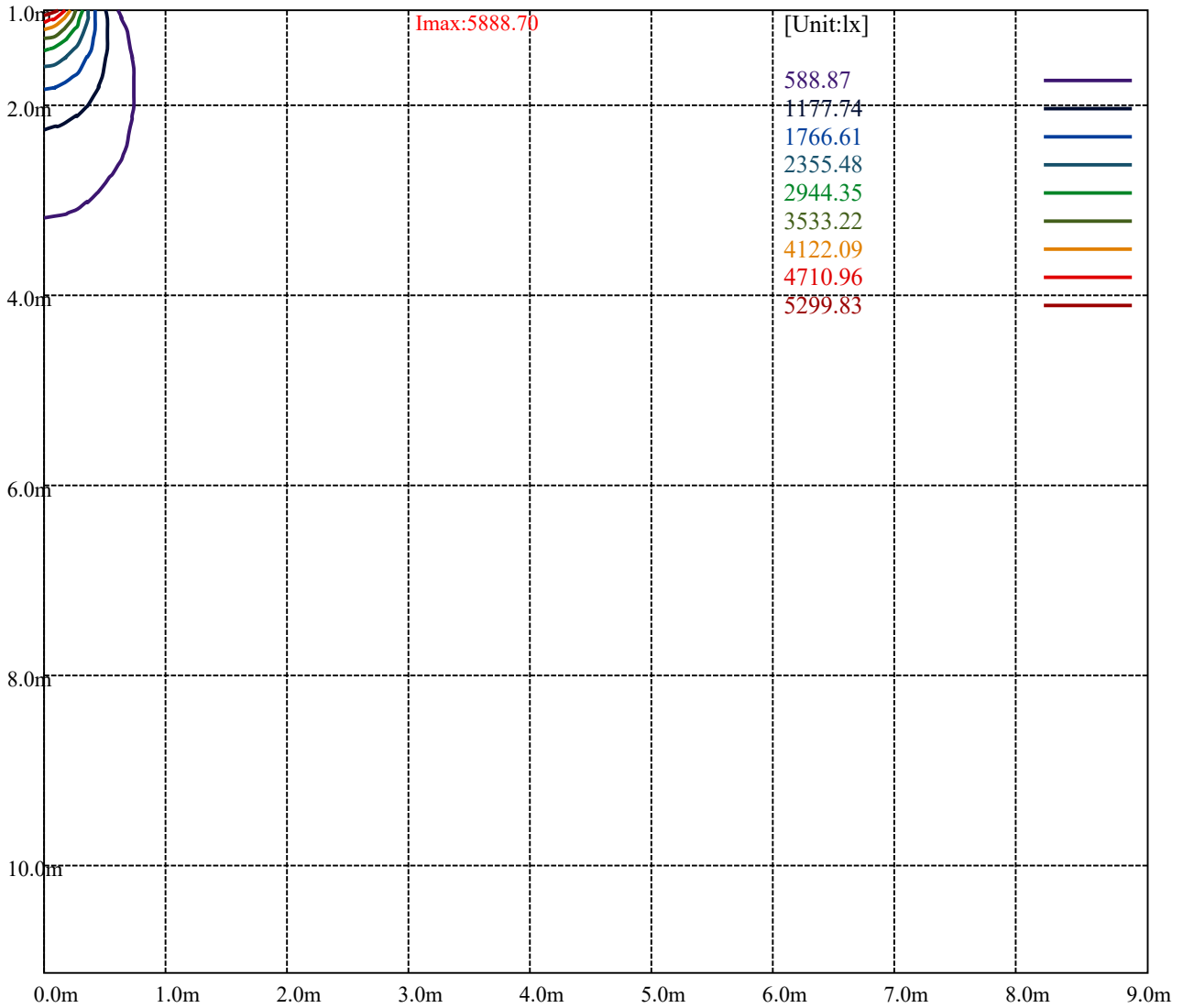
**Imax:5888.70**

|                   |   |
|-------------------|---|
| (10%Imax) 588.87  | — |
| (20%Imax) 1177.74 | — |
| (30%Imax) 1766.61 | — |
| (40%Imax) 2355.48 | — |
| (50%Imax) 2944.35 | — |
| (60%Imax) 3533.22 | — |
| (70%Imax) 4122.09 | — |
| (80%Imax) 4710.96 | — |
| (90%Imax) 5299.83 | — |



- (10%Emax) 65.42989
- (20%Emax) 130.86
- (30%Emax) 196.29
- (40%Emax) 261.72
- (50%Emax) 327.1489
- (60%Emax) 392.5789
- (70%Emax) 458.0089
- (80%Emax) 523.4389
- (90%Emax) 588.8689





Luminance Table

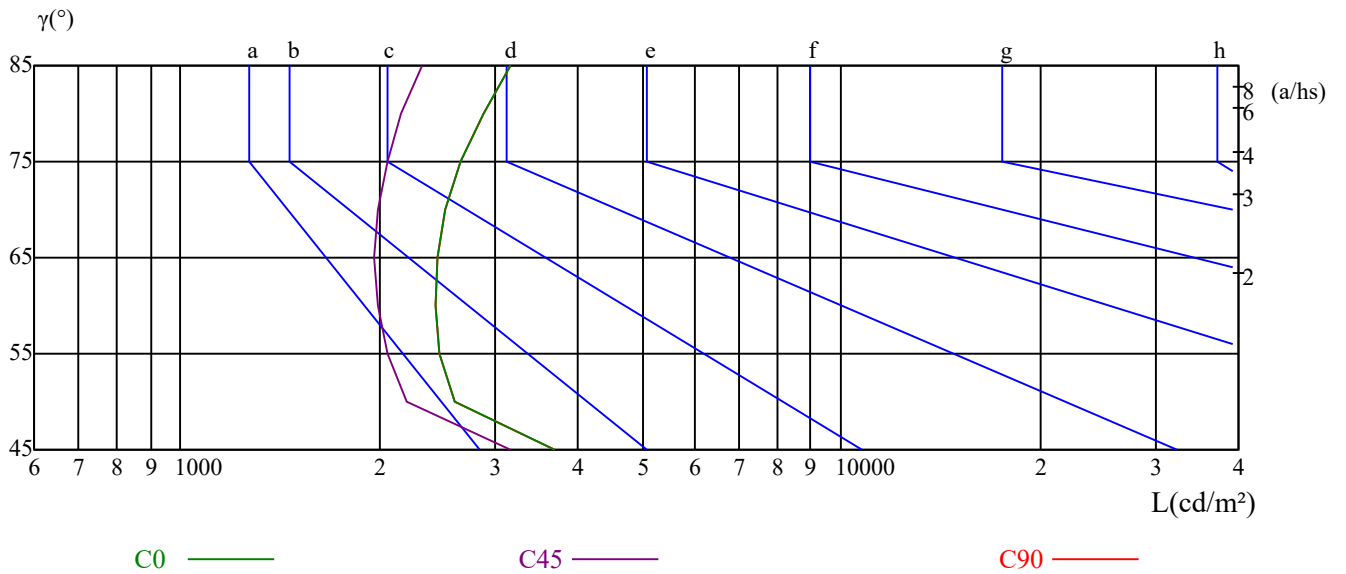
| $\gamma$ | 45   | 50   | 55   | 60   | 65   | 70   | 75   | 80   | 85   |
|----------|------|------|------|------|------|------|------|------|------|
| C0       | 3678 | 2595 | 2462 | 2429 | 2446 | 2522 | 2656 | 2868 | 3160 |
| C45      | 3160 | 2197 | 2052 | 1991 | 1970 | 1992 | 2053 | 2163 | 2314 |
| C90      | 3678 | 2595 | 2462 | 2429 | 2446 | 2522 | 2656 | 2868 | 3160 |

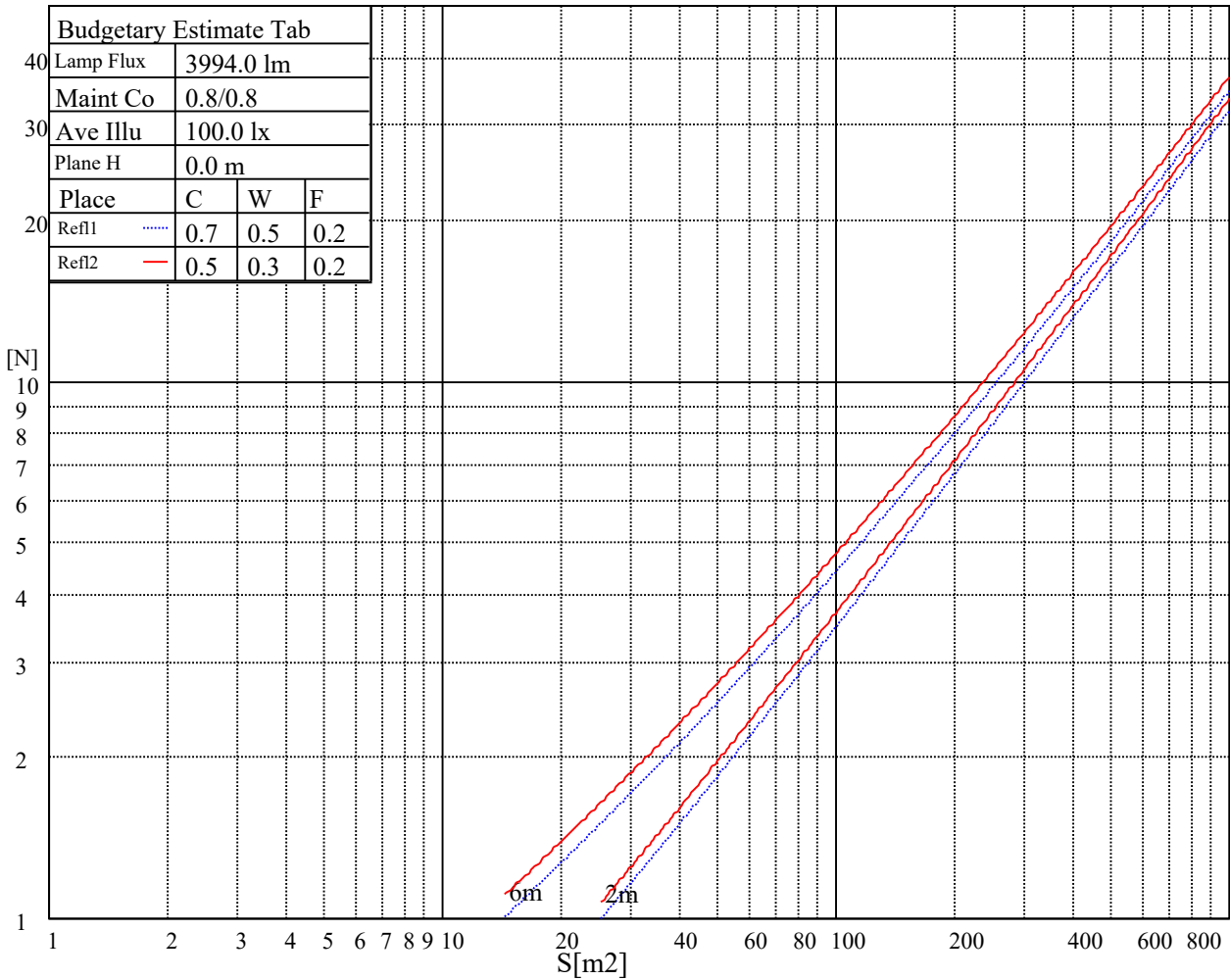
| L(Hor)(65) | L(Ver)(65) | L45(65) | L(Hor)(75) | L(Ver)(75) | L45(75) | L(Hor)(85) | L(Ver)(85) | L45(85) |
|------------|------------|---------|------------|------------|---------|------------|------------|---------|
| 5875       | 5875       | 5875    | 9139       | 9139       | 9139    | 26775      | 26775      | 26775   |

Glare Table

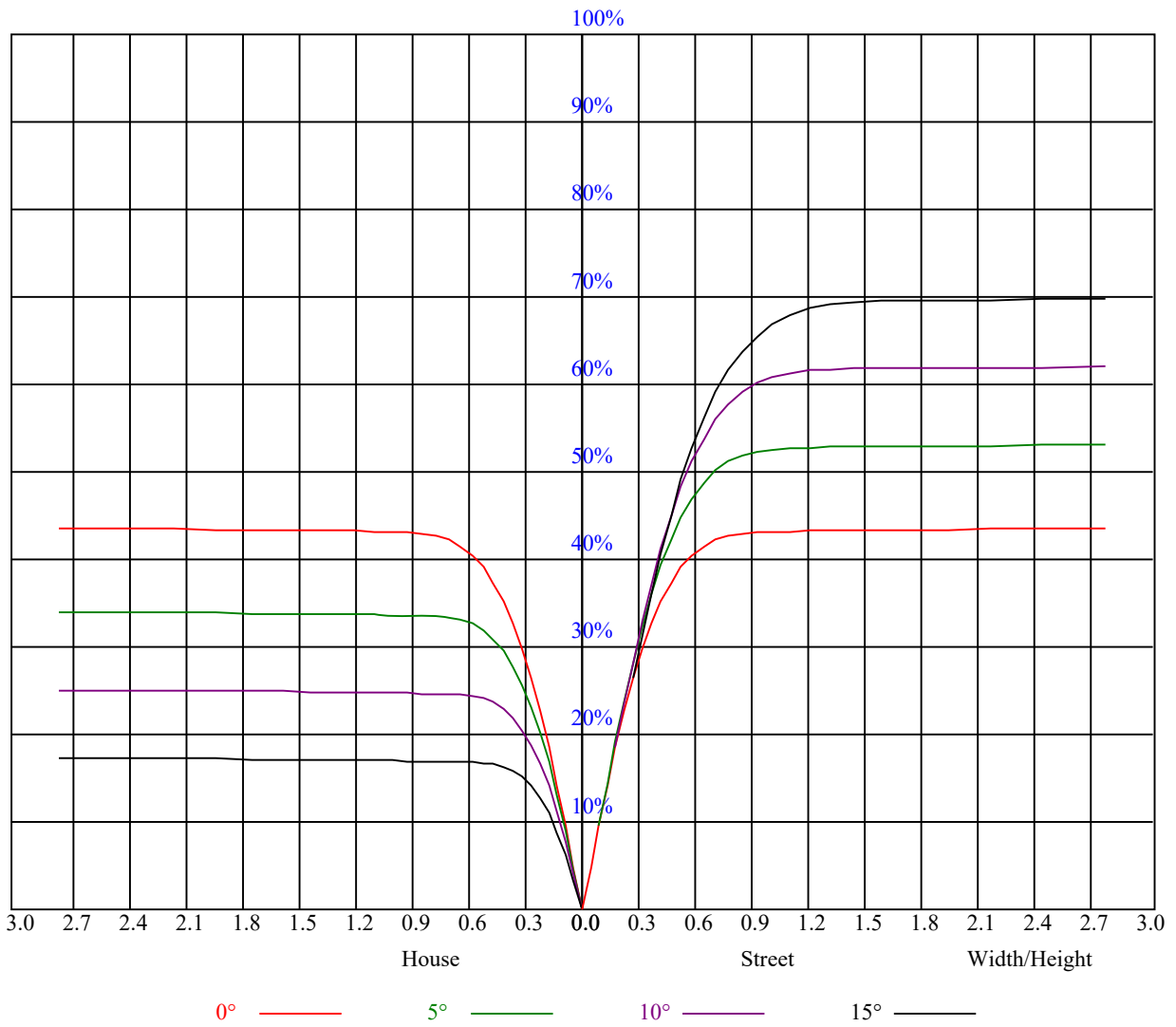
| Glare | Quality | Service Values Illuminance(lx) |      |      |       |       |       |       |       |
|-------|---------|--------------------------------|------|------|-------|-------|-------|-------|-------|
| 1.15  | A       | 2000                           | 1000 | 500  | <=300 |       |       |       |       |
| 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 RHOF=20 CU |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 0     | 1.05                                   | 1.05 | 1.05 | 1.02 | 1.02 | 1.02 | 0.98 | 0.98 | 0.98 | 0.94 | 0.94 | 0.94 | 0.90 | 0.90 | 0.90 | 0.88 |
| 1     | 0.98                                   | 0.96 | 0.94 | 0.96 | 0.94 | 0.92 | 0.92 | 0.91 | 0.90 | 0.89 | 0.88 | 0.87 | 0.86 | 0.85 | 0.84 | 0.83 |
| 2     | 0.92                                   | 0.88 | 0.86 | 0.90 | 0.87 | 0.85 | 0.87 | 0.85 | 0.83 | 0.85 | 0.83 | 0.81 | 0.82 | 0.81 | 0.79 | 0.78 |
| 3     | 0.86                                   | 0.82 | 0.79 | 0.85 | 0.81 | 0.78 | 0.83 | 0.80 | 0.77 | 0.81 | 0.78 | 0.76 | 0.79 | 0.76 | 0.75 | 0.73 |
| 4     | 0.81                                   | 0.77 | 0.73 | 0.80 | 0.76 | 0.73 | 0.78 | 0.75 | 0.72 | 0.77 | 0.74 | 0.71 | 0.75 | 0.72 | 0.70 | 0.69 |
| 5     | 0.77                                   | 0.72 | 0.69 | 0.76 | 0.72 | 0.68 | 0.74 | 0.71 | 0.68 | 0.73 | 0.70 | 0.67 | 0.72 | 0.69 | 0.66 | 0.65 |
| 6     | 0.73                                   | 0.68 | 0.64 | 0.72 | 0.67 | 0.64 | 0.71 | 0.67 | 0.64 | 0.69 | 0.66 | 0.63 | 0.68 | 0.65 | 0.63 | 0.62 |
| 7     | 0.69                                   | 0.64 | 0.61 | 0.68 | 0.64 | 0.60 | 0.67 | 0.63 | 0.60 | 0.66 | 0.63 | 0.60 | 0.65 | 0.62 | 0.60 | 0.58 |
| 8     | 0.65                                   | 0.61 | 0.57 | 0.65 | 0.60 | 0.57 | 0.64 | 0.60 | 0.57 | 0.63 | 0.59 | 0.57 | 0.62 | 0.59 | 0.57 | 0.55 |
| 9     | 0.62                                   | 0.58 | 0.54 | 0.62 | 0.57 | 0.54 | 0.61 | 0.57 | 0.54 | 0.60 | 0.57 | 0.54 | 0.60 | 0.56 | 0.54 | 0.53 |
| 10    | 0.59                                   | 0.55 | 0.52 | 0.59 | 0.55 | 0.52 | 0.58 | 0.54 | 0.51 | 0.58 | 0.54 | 0.51 | 0.57 | 0.54 | 0.51 | 0.50 |



Intensity data(cd)

| C/γ(°) | 0.0     | 5.0     | 10.0    | 15.0    | 20.0    | 25.0    | 30.0    | 35.0    | 40.0   |
|--------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| 0.0    | 5886.63 | 5687.88 | 5218.25 | 4429.84 | 3492.23 | 2518.28 | 1761.25 | 945.87  | 351.26 |
| 45.0   | 5892.14 | 5696.69 | 5133.46 | 4305.41 | 3440.47 | 2383.94 | 1644.53 | 821.44  | 295.10 |
| 90.0   | 5880.57 | 5616.85 | 4988.11 | 4139.69 | 3167.95 | 2247.95 | 1511.30 | 728.56  | 153.88 |
| 135.0  | 5895.44 | 5717.06 | 5157.13 | 4342.85 | 3378.81 | 2388.90 | 1722.71 | 874.85  | 278.03 |
| 180.0  | 5886.63 | 5644.93 | 4952.87 | 4205.21 | 3226.31 | 2293.10 | 1596.09 | 766.11  | 189.06 |
| 225.0  | 5892.14 | 5677.97 | 5110.89 | 4337.89 | 3385.42 | 2376.78 | 1666.56 | 868.68  | 242.63 |
| 270.0  | 5880.57 | 5767.16 | 5263.94 | 4559.22 | 3586.92 | 2538.10 | 1820.16 | 1022.95 | 320.98 |
| 315.0  | 5895.44 | 5644.38 | 5130.16 | 4307.06 | 3328.16 | 2385.59 | 1658.30 | 819.46  | 229.31 |
| 360.0  | 5886.63 | 5687.88 | 5218.25 | 4429.84 | 3492.23 | 2518.28 | 1761.25 | 945.87  | 351.26 |

| C/γ(°) | 45.0  | 50.0  | 55.0  | 60.0  | 65.0  | 70.0  | 75.0  | 80.0  | 85.0  |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0.0    | 29.51 | 18.17 | 16.68 | 15.80 | 15.14 | 14.76 | 14.42 | 14.37 | 14.26 |
| 45.0   | 23.89 | 17.62 | 16.46 | 15.64 | 15.03 | 14.65 | 14.42 | 14.26 | 14.15 |
| 90.0   | 21.69 | 17.56 | 16.46 | 15.64 | 15.03 | 14.59 | 14.37 | 14.20 | 14.15 |
| 135.0  | 27.91 | 18.33 | 16.79 | 15.97 | 15.20 | 14.76 | 14.42 | 14.26 | 14.15 |
| 180.0  | 24.33 | 17.78 | 16.41 | 15.64 | 15.03 | 14.59 | 14.37 | 14.26 | 14.20 |
| 225.0  | 24.17 | 18.11 | 16.52 | 15.69 | 15.03 | 14.59 | 14.37 | 14.26 | 14.26 |
| 270.0  | 32.92 | 18.72 | 16.90 | 15.86 | 15.25 | 14.76 | 14.37 | 14.26 | 14.20 |
| 315.0  | 24.89 | 18.17 | 16.68 | 15.86 | 15.14 | 14.70 | 14.37 | 14.26 | 14.20 |
| 360.0  | 29.51 | 18.17 | 16.68 | 15.80 | 15.14 | 14.76 | 14.42 | 14.37 | 14.26 |

| C/γ(°) | 90.0  |
|--------|-------|
| 0.0    | 14.04 |
| 45.0   | 14.04 |
| 90.0   | 14.04 |
| 135.0  | 14.04 |
| 180.0  | 14.04 |
| 225.0  | 14.09 |
| 270.0  | 14.04 |
| 315.0  | 14.04 |
| 360.0  | 14.04 |