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Nata

LumCAT: 3-1966-E

Luminaire:

Report No: NATA0100

Voltage(V): 218.8000

Test No: 2017022306

Current(A): 0.1480

LampCAT: OSRAM PL-CORE-Z6-MINI -300Power (W): 30.8000

Lamp flux(lm): 2590.0

PF: 0.9500

Number of Lamps: 1

Ballast type:

Length(mm): 78

Width(mm): 78

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 2338.15

Efficiency(%): 90.28%

Lumens(lm)/Power(W): 76.55

Central intensity(cd): 3639.022

Maximum intensity(cd): 3639.022

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=47.5

[C90/270]Total=47.5

Field angle(10%Imax): [C0/180]Total=75.1

[C90/270]Total=75.1

Maximum s/h(1/2): C0_180=0.75 C90_270=0.75

Maximum s/h(1/4): C0_180=0.77 C90_270=0.77

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 91.03%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 97.737%

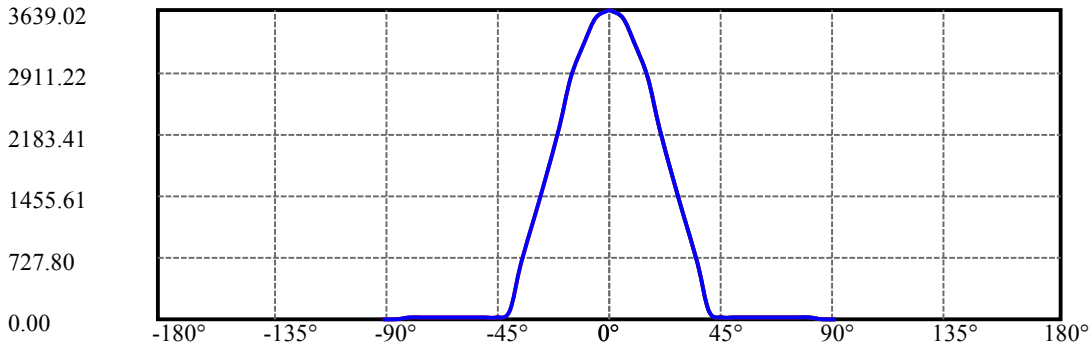
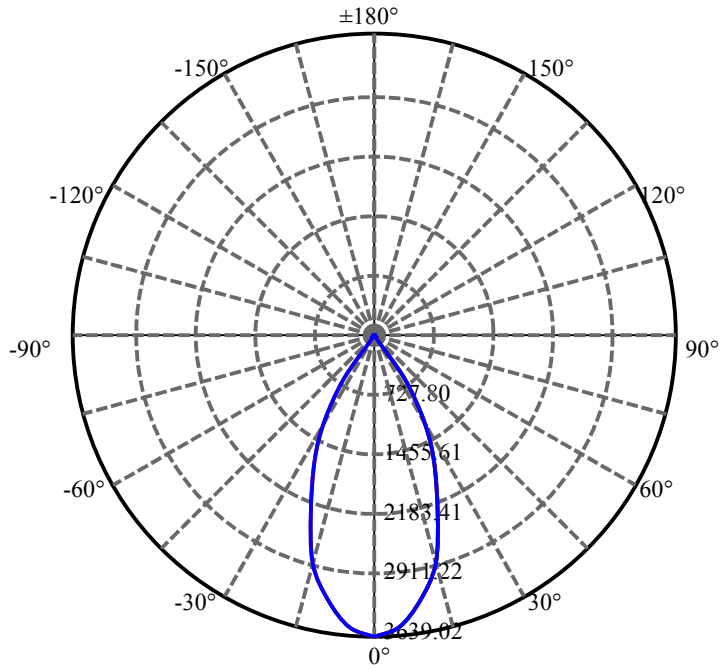
| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 0.0 | 3639.022 | 21.762 | 21.762 | .840% | .931% |
| 5.0 | 3542.535 | 169.239 | 191.001 | 6.534% | 8.169% |
| 10.0 | 3248.603 | 309.212 | 500.213 | 11.939% | 21.393% |
| 15.0 | 2851.440 | 404.529 | 904.742 | 15.619% | 38.695% |
| 20.0 | 2266.672 | 424.942 | 1329.684 | 16.407% | 56.869% |
| 25.0 | 1672.958 | 387.545 | 1717.229 | 14.963% | 73.444% |
| 30.0 | 1198.688 | 328.523 | 2045.752 | 12.684% | 87.494% |
| 35.0 | 647.869 | 203.689 | 2249.442 | 7.864% | 96.206% |
| 40.0 | 87.003 | 30.654 | 2280.096 | 1.184% | 97.517% |
| 45.0 | 16.675 | 6.463 | 2286.559 | .250% | 97.793% |
| 50.0 | 14.039 | 5.895 | 2292.454 | .228% | 98.045% |
| 55.0 | 13.152 | 5.905 | 2298.359 | .228% | 98.298% |
| 60.0 | 12.615 | 5.988 | 2304.347 | .231% | 98.554% |
| 65.0 | 12.161 | 6.041 | 2310.389 | .233% | 98.813% |
| 70.0 | 11.789 | 6.072 | 2316.461 | .234% | 99.072% |
| 75.0 | 12.223 | 6.471 | 2322.932 | .250% | 99.349% |
| 80.0 | 12.766 | 6.891 | 2329.824 | .266% | 99.644% |
| 85.0 | 10.447 | 5.705 | 2335.528 | .220% | 99.888% |
| 90.0 | 9.580 | 2.626 | 2338.154 | .101% | 100.000% |

ZONAL LUMEN SUMMARY

| Zone | Lumens | %Lamp | %Fixt |
|---------|---------|--------|---------|
| 0-30 | 2045.75 | 78.99% | 87.49% |
| 0-40 | 2280.10 | 88.03% | 97.52% |
| 0-60 | 2304.35 | 88.97% | 98.55% |
| 0-90 | 2335.53 | 90.17% | 99.89% |
| 0-120 | 2335.53 | 90.17% | 99.89% |
| 0-180 | 2338.15 | 90.28% | 100.00% |
| 60-90 | 37.17 | 1.44% | 1.59% |
| 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% |
| 0-27.33 | 1870.52 | 72.22% | 80.00% |

ZONAL LUMEN SUMMARY

| | |
|---------|--------|
| 0-10 | 500.21 |
| 10-20 | 829.47 |
| 20-30 | 716.07 |
| 30-40 | 234.34 |
| 40-50 | 12.36 |
| 50-60 | 11.89 |
| 60-70 | 12.11 |
| 70-80 | 13.36 |
| 80-90 | 5.70 |
| 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: —————

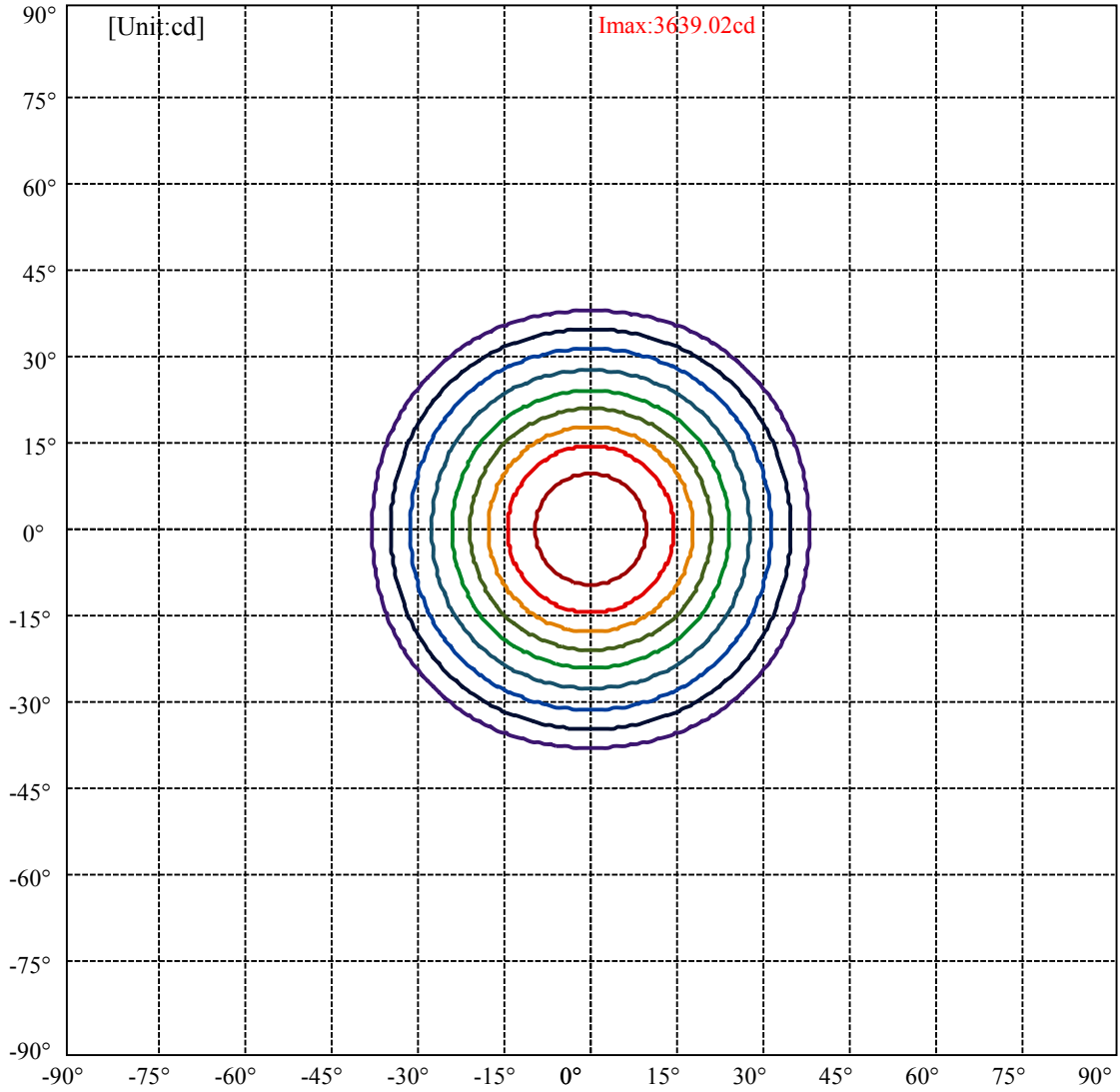
C90/C270: —————

Field angle(10%Imax):C0/180Left:37.5 Right:37.5

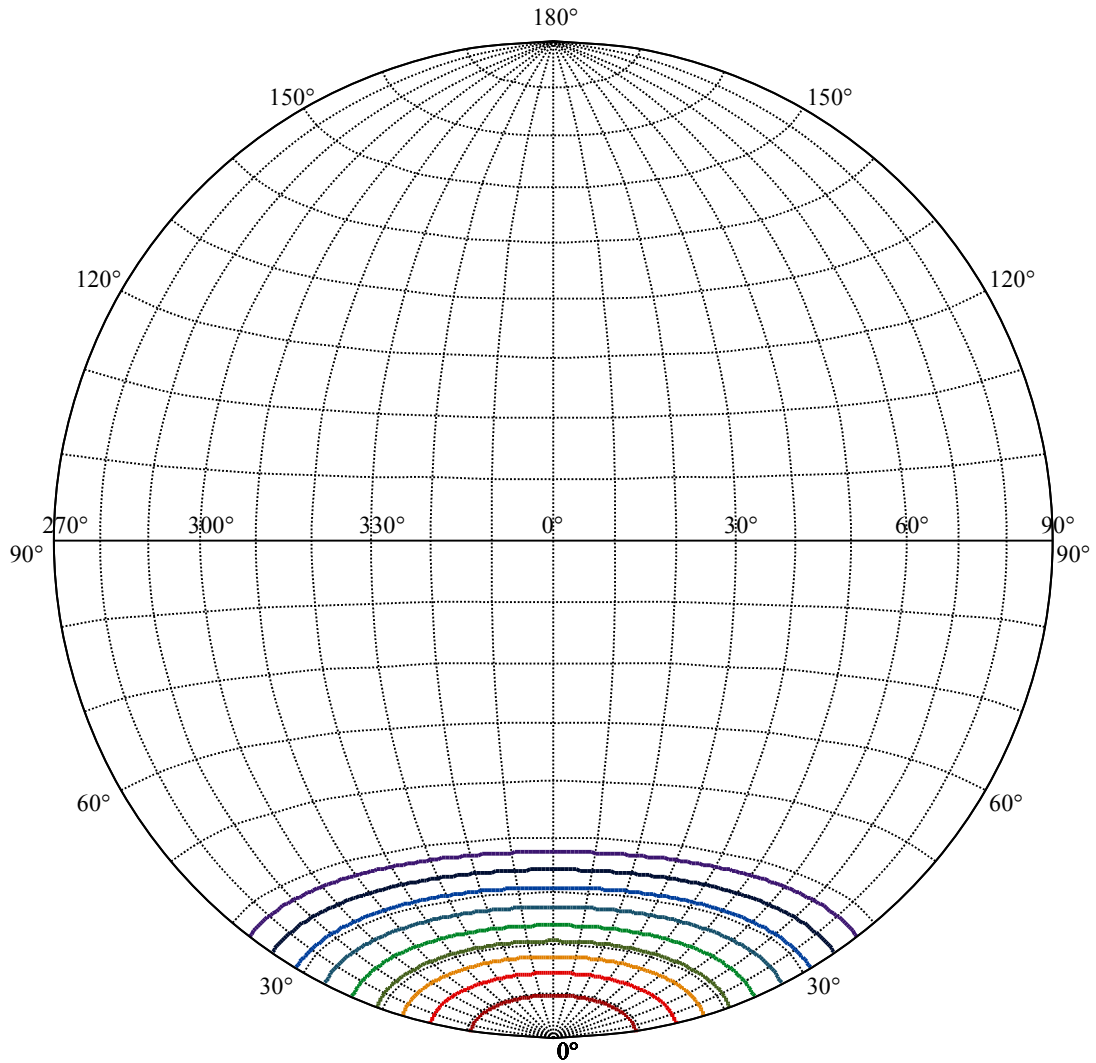
:C90/270Left:37.5 Right:37.5

Beam Angle(50%Imax):C0/180Left:23.8 Right:23.8

:C90/270Left:23.8 Right:23.8



| | |
|-------------------|---|
| (10%Imax) 363.902 | — |
| (20%Imax) 727.804 | — |
| (30%Imax) 1091.71 | — |
| (40%Imax) 1455.61 | — |
| (50%Imax) 1819.51 | — |
| (60%Imax) 2183.41 | — |
| (70%Imax) 2547.32 | — |
| (80%Imax) 2911.22 | — |
| (90%Imax) 3275.12 | — |



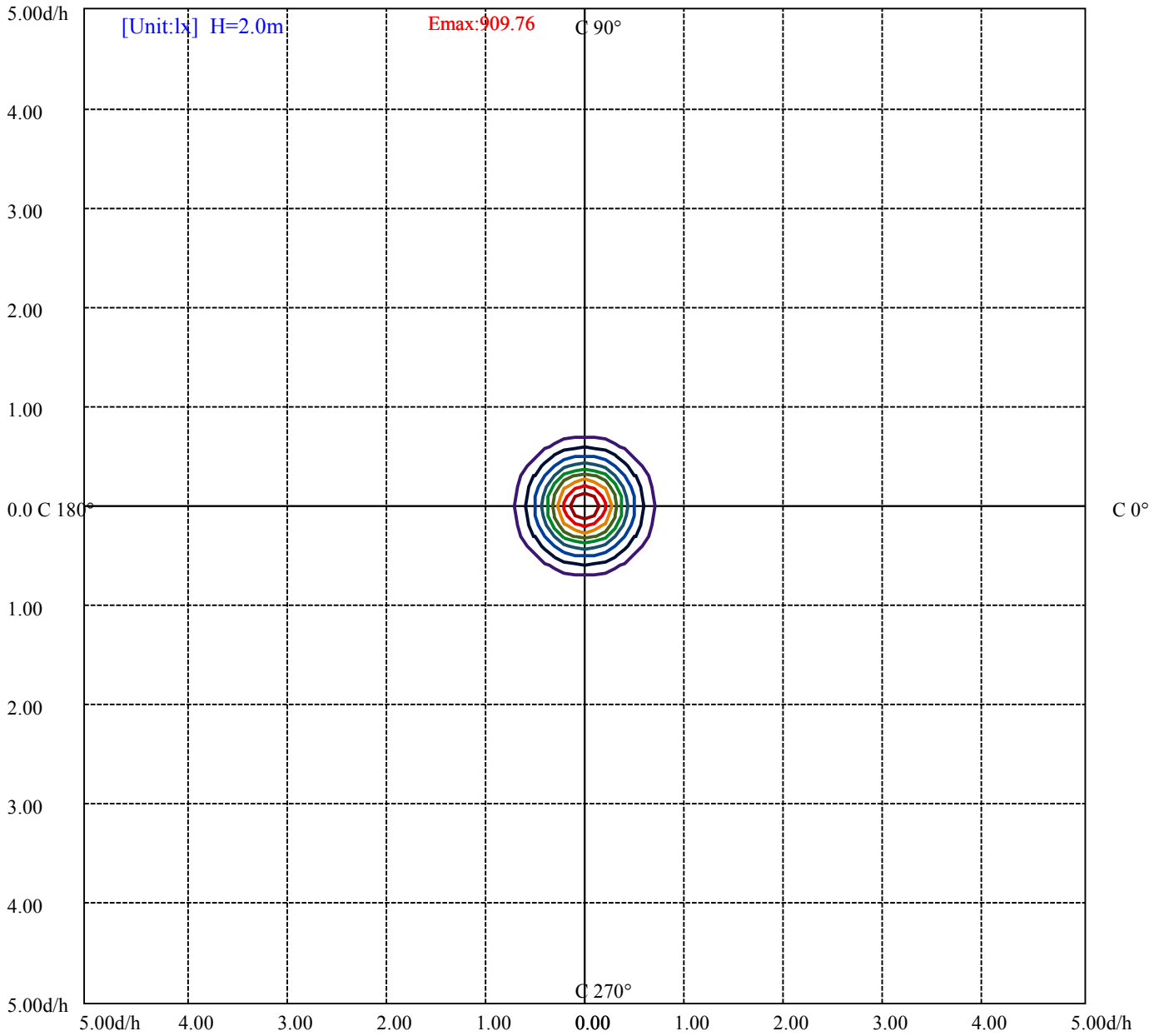
House

[Unit:cd]

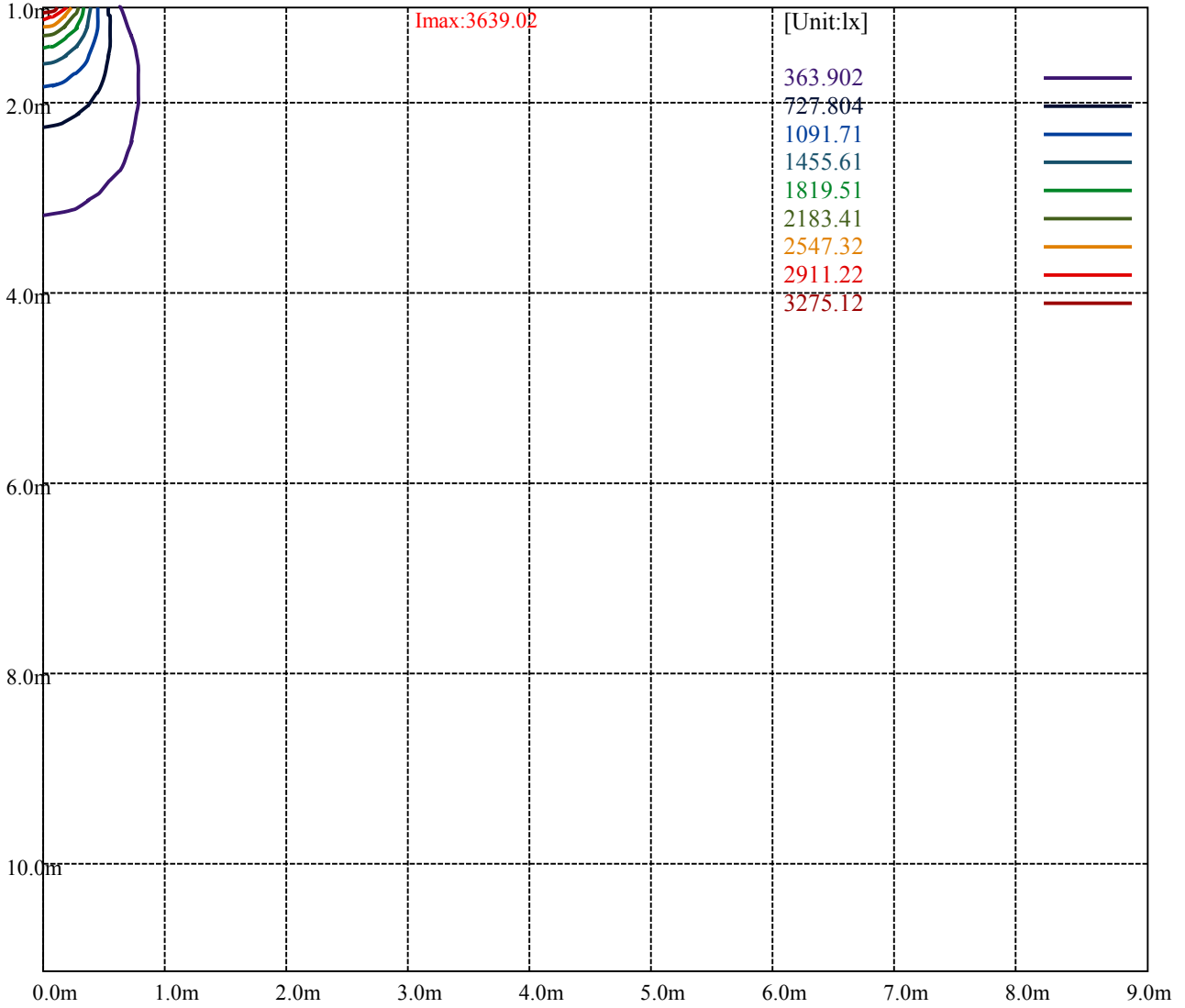
Road

Imax:3639.02

| | |
|-------------------|---|
| (10%Imax) 363.902 | — |
| (20%Imax) 727.804 | — |
| (30%Imax) 1091.71 | — |
| (40%Imax) 1455.61 | — |
| (50%Imax) 1819.51 | — |
| (60%Imax) 2183.41 | — |
| (70%Imax) 2547.32 | — |
| (80%Imax) 2911.22 | — |
| (90%Imax) 3275.12 | — |



| | |
|--------------------|---|
| (10%Emax) 90.9755 | — |
| (20%Emax) 181.951 | — |
| (30%Emax) 272.9275 | — |
| (40%Emax) 363.9025 | — |
| (50%Emax) 454.8775 | — |
| (60%Emax) 545.8525 | — |
| (70%Emax) 636.8275 | — |
| (80%Emax) 727.805 | — |
| (90%Emax) 818.78 | — |



Luminance Table

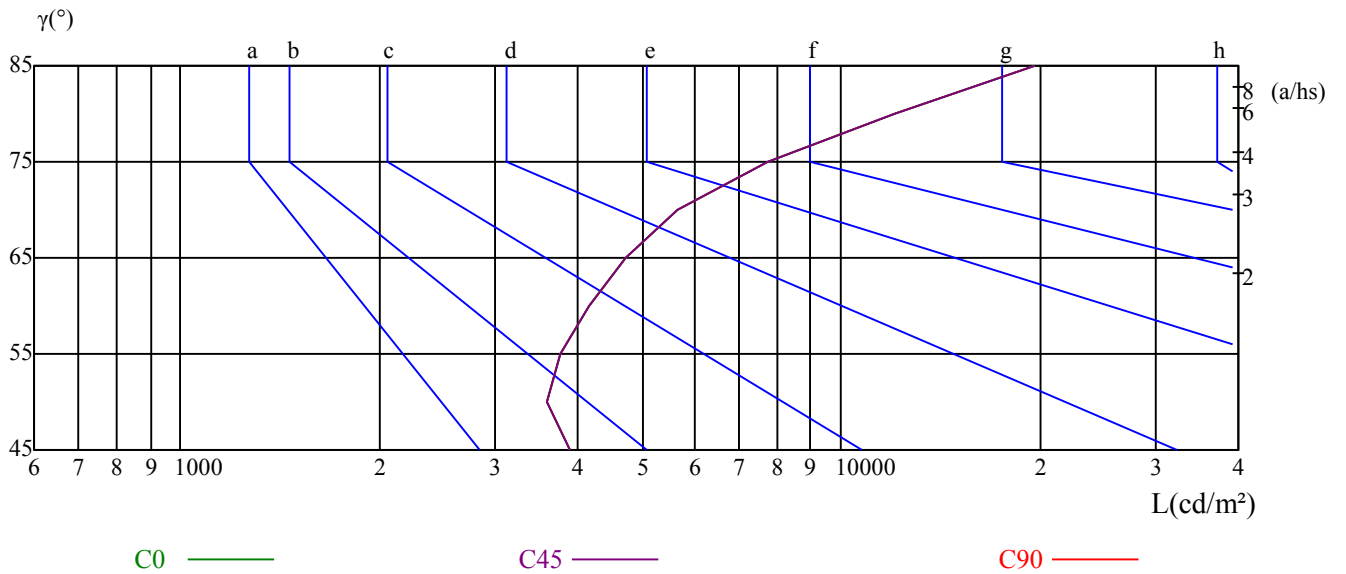
| γ | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 |
|----------|------|------|------|------|------|------|------|-------|-------|
| C0 | 3876 | 3590 | 3769 | 4147 | 4730 | 5665 | 7762 | 12084 | 19702 |
| C45 | 3876 | 3590 | 3769 | 4147 | 4730 | 5665 | 7762 | 12084 | 19702 |
| C90 | 3876 | 3590 | 3769 | 4147 | 4730 | 5665 | 7762 | 12084 | 19702 |

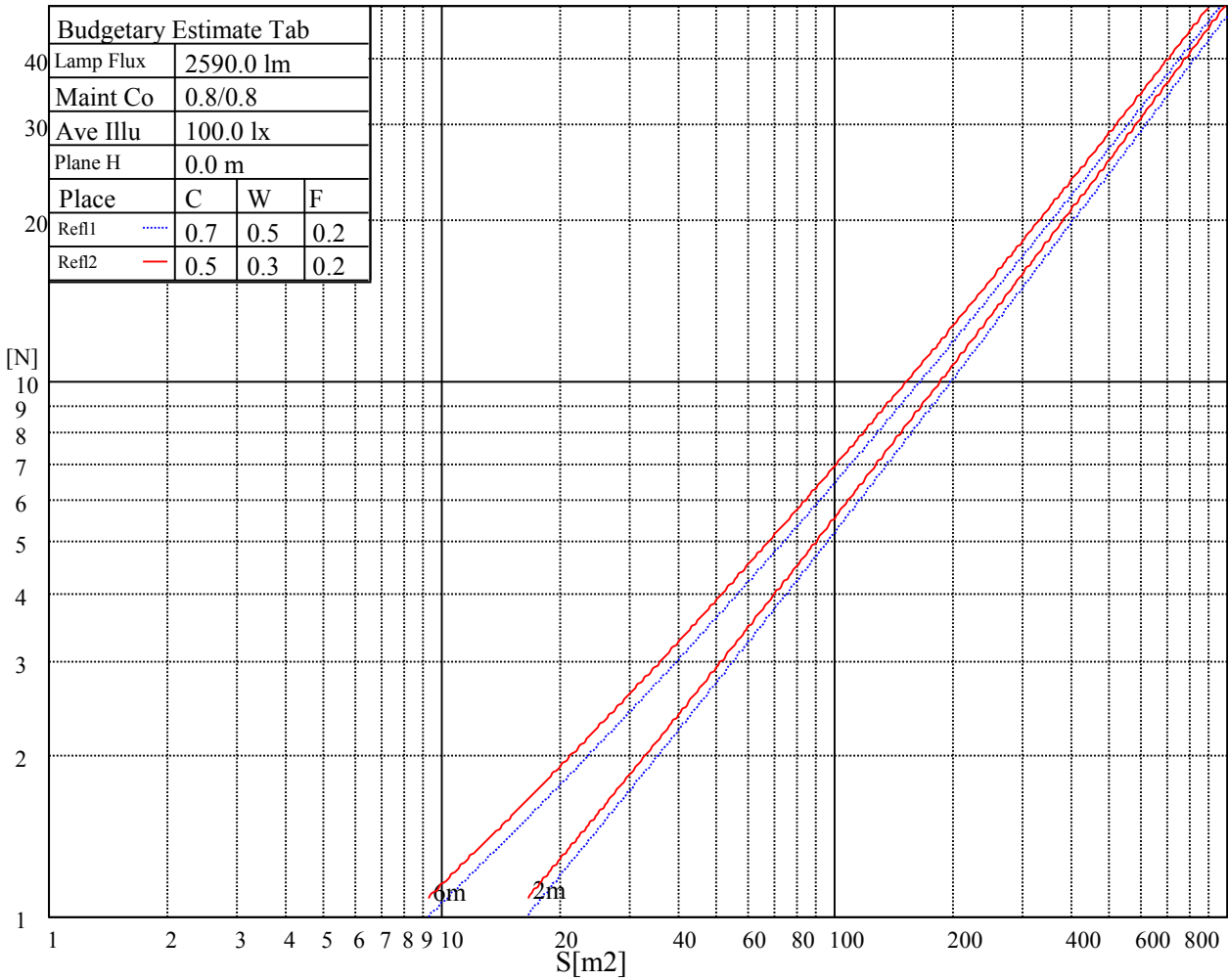
| L(Hor)(65) | L(Ver)(65) | L45(65) | L(Hor)(75) | L(Ver)(75) | L45(75) | L(Hor)(85) | L(Ver)(85) | L45(85) |
|------------|------------|---------|------------|------------|---------|------------|------------|---------|
| 4730 | 4730 | 4730 | 7762 | 7762 | 7762 | 19702 | 19702 | 19702 |

Glare Table

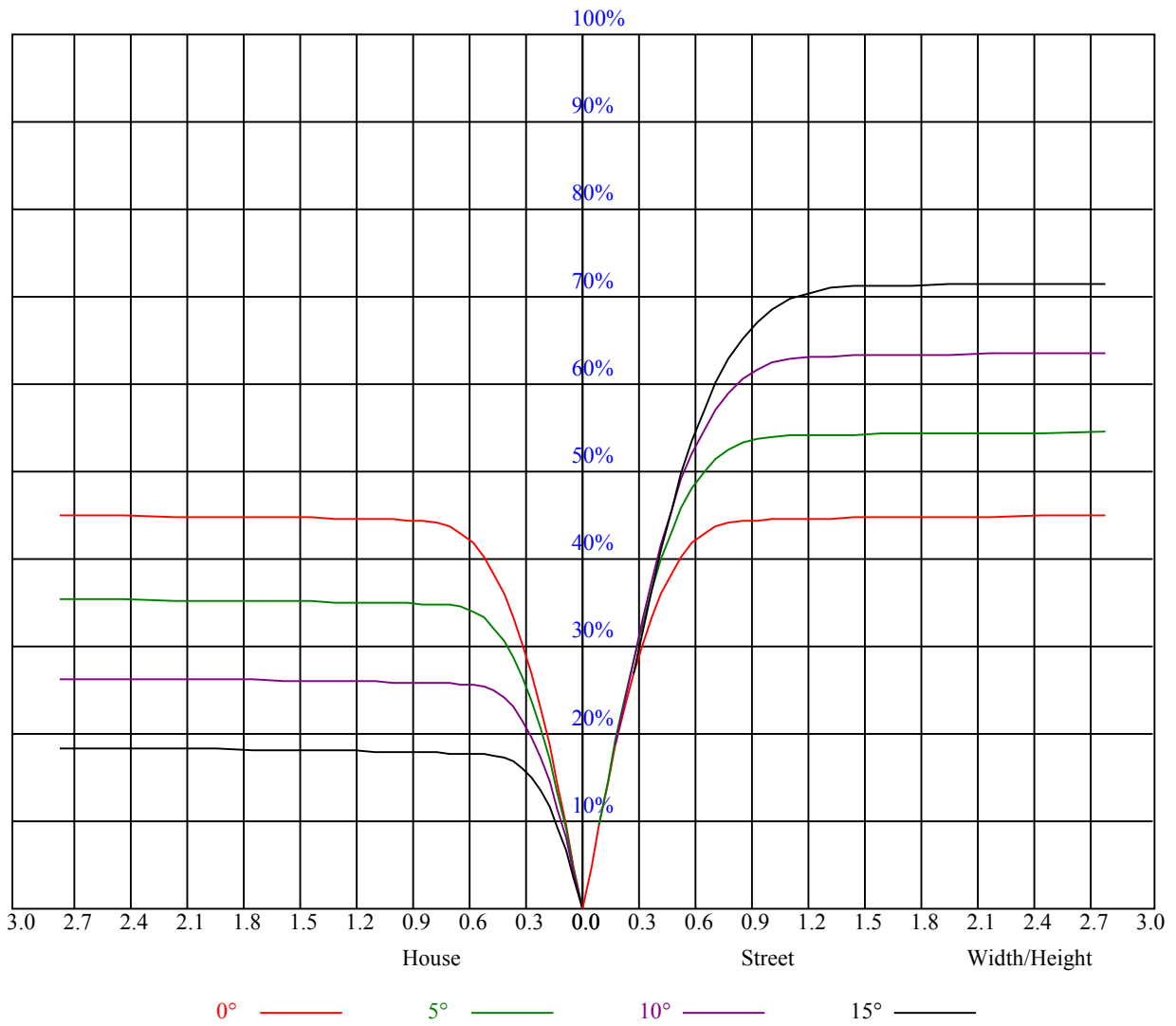
| Glare | Quality | Service Values Illuminance(lx) | | | | | | | |
|-------|---------|--------------------------------|------|------|-------|-------|-------|-------|-------|
| | | a | b | c | d | e | f | g | h |
| 1.15 | A | 2000 | 1000 | 500 | <=300 | | | | |
| 1.5 | B | | 2000 | 1000 | 500 | <=300 | | | |
| 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 | 1.08 | 1.08 | 1.08 | 1.06 | 1.06 | 1.06 | 1.01 | 1.01 | 1.01 | 0.97 | 0.97 | 0.97 | 0.93 | 0.93 | 0.93 | 0.91 |
| 1 | 1.00 | 0.98 | 0.96 | 0.98 | 0.96 | 0.94 | 0.95 | 0.93 | 0.92 | 0.91 | 0.90 | 0.89 | 0.88 | 0.87 | 0.86 | 0.85 |
| 2 | 0.95 | 0.91 | 0.88 | 0.93 | 0.90 | 0.87 | 0.90 | 0.87 | 0.85 | 0.87 | 0.85 | 0.83 | 0.85 | 0.83 | 0.82 | 0.80 |
| 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 | 0.77 | 0.76 |
| 4 | 0.85 | 0.80 | 0.77 | 0.84 | 0.79 | 0.76 | 0.82 | 0.78 | 0.75 | 0.80 | 0.77 | 0.75 | 0.78 | 0.76 | 0.74 | 0.72 |
| 5 | 0.80 | 0.76 | 0.72 | 0.80 | 0.75 | 0.72 | 0.78 | 0.74 | 0.71 | 0.77 | 0.73 | 0.71 | 0.75 | 0.72 | 0.70 | 0.69 |
| 6 | 0.77 | 0.72 | 0.68 | 0.76 | 0.72 | 0.68 | 0.75 | 0.71 | 0.68 | 0.73 | 0.70 | 0.67 | 0.72 | 0.69 | 0.67 | 0.66 |
| 7 | 0.73 | 0.68 | 0.65 | 0.73 | 0.68 | 0.65 | 0.72 | 0.68 | 0.65 | 0.71 | 0.67 | 0.64 | 0.70 | 0.66 | 0.64 | 0.63 |
| 8 | 0.70 | 0.65 | 0.62 | 0.70 | 0.65 | 0.62 | 0.69 | 0.65 | 0.62 | 0.68 | 0.64 | 0.61 | 0.67 | 0.64 | 0.61 | 0.60 |
| 9 | 0.67 | 0.62 | 0.59 | 0.67 | 0.62 | 0.59 | 0.66 | 0.62 | 0.59 | 0.65 | 0.61 | 0.59 | 0.64 | 0.61 | 0.59 | 0.58 |
| 10 | 0.64 | 0.60 | 0.57 | 0.64 | 0.60 | 0.57 | 0.63 | 0.59 | 0.57 | 0.63 | 0.59 | 0.56 | 0.62 | 0.59 | 0.56 | 0.55 |



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 | 3635.92 | 3539.58 | 3270.90 | 2887.16 | 2274.93 | 1666.01 | 1261.34 | 632.60 | 46.47 |
| 45.0 | 3645.83 | 3547.83 | 3240.07 | 2826.05 | 2231.99 | 1656.10 | 1254.18 | 645.81 | 69.70 |
| 90.0 | 3640.33 | 3552.24 | 3210.34 | 2813.38 | 2288.69 | 1723.27 | 1296.58 | 734.01 | 116.83 |
| 135.0 | 3635.37 | 3622.16 | 3378.81 | 3001.67 | 2512.22 | 1831.18 | 1376.41 | 930.45 | 286.29 |
| 180.0 | 3635.92 | 3551.69 | 3303.93 | 2893.76 | 2238.59 | 1673.16 | 1079.60 | 609.03 | 54.78 |
| 225.0 | 3645.83 | 3523.61 | 3246.68 | 2887.16 | 2287.04 | 1661.60 | 1082.08 | 623.79 | 56.21 |
| 270.0 | 3640.33 | 3537.37 | 3188.87 | 2823.84 | 2247.40 | 1667.66 | 1176.00 | 591.86 | 38.70 |
| 315.0 | 3632.62 | 3465.80 | 3149.23 | 2678.49 | 2052.50 | 1504.69 | 1063.30 | 415.40 | 27.03 |
| 360.0 | 3635.92 | 3539.58 | 3270.90 | 2887.16 | 2274.93 | 1666.01 | 1261.34 | 632.60 | 46.47 |

| C/γ(°) | 45.0 | 50.0 | 55.0 | 60.0 | 65.0 | 70.0 | 75.0 | 80.0 | 85.0 |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0.0 | 17.34 | 14.92 | 13.76 | 13.05 | 12.44 | 12.17 | 12.61 | 13.10 | 11.07 |
| 45.0 | 16.52 | 14.42 | 13.54 | 12.94 | 12.50 | 12.00 | 11.51 | 11.18 | 10.35 |
| 90.0 | 17.78 | 13.05 | 12.22 | 11.73 | 11.40 | 11.01 | 10.41 | 10.19 | 9.91 |
| 135.0 | 20.43 | 14.76 | 13.76 | 13.16 | 12.66 | 12.28 | 11.89 | 15.14 | 10.79 |
| 180.0 | 16.74 | 14.87 | 13.82 | 13.16 | 12.61 | 12.17 | 12.11 | 13.32 | 10.52 |
| 225.0 | 15.80 | 14.04 | 13.21 | 12.77 | 12.33 | 11.95 | 11.51 | 11.07 | 10.35 |
| 270.0 | 13.93 | 12.44 | 11.78 | 11.45 | 11.07 | 10.63 | 10.30 | 10.85 | 9.74 |
| 315.0 | 14.87 | 13.82 | 13.10 | 12.66 | 12.28 | 12.11 | 17.45 | 17.29 | 10.85 |
| 360.0 | 17.34 | 14.92 | 13.76 | 13.05 | 12.44 | 12.17 | 12.61 | 13.10 | 11.07 |

| C/γ(°) | 90.0 |
|--------|------|
| 0.0 | 9.58 |
| 45.0 | 9.63 |
| 90.0 | 9.58 |
| 135.0 | 9.58 |
| 180.0 | 9.52 |
| 225.0 | 9.63 |
| 270.0 | 9.58 |
| 315.0 | 9.52 |
| 360.0 | 9.58 |