
LumCAT: 61.0011.03

Luminaire:

Report No: NATA0100

Voltage(V): 34.9000

Test No: GC2019120601

Current(A): 0.1470

LampCAT: LUMINUS CXM-4-AC40

Power (W): 5.1300

Lamp flux(lm): 602.0

PF: 1.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 0

Width(mm): 0

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 537.33

Efficiency(%): 89.26%

Lumens(lm)/Power(W): 104.74

Central intensity(cd): 881.072

Maximum intensity(cd): 881.072

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=38.7

[C90/270]Total=38.7

Field angle(10%Imax): [C0/180]Total=75.7

[C90/270]Total=75.7

Maximum s/h(1/2): C0_180=0.63 C90_270=0.63

Maximum s/h(1/4): C0_180=0.64 C90_270=0.64

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 89.26%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 92.895%

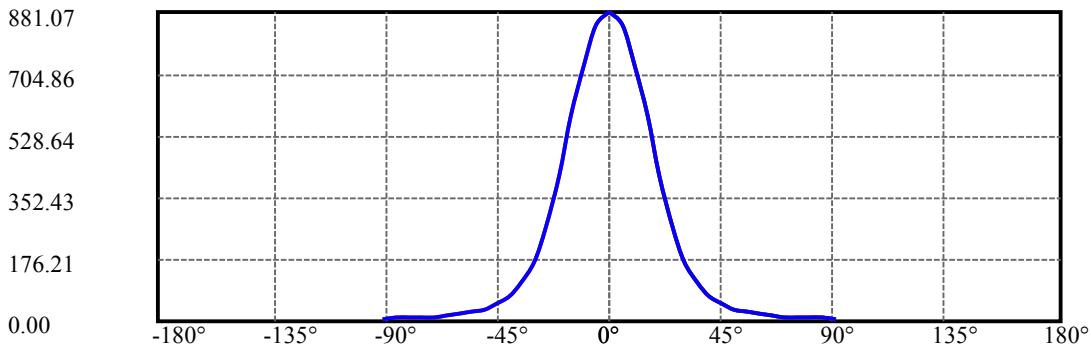
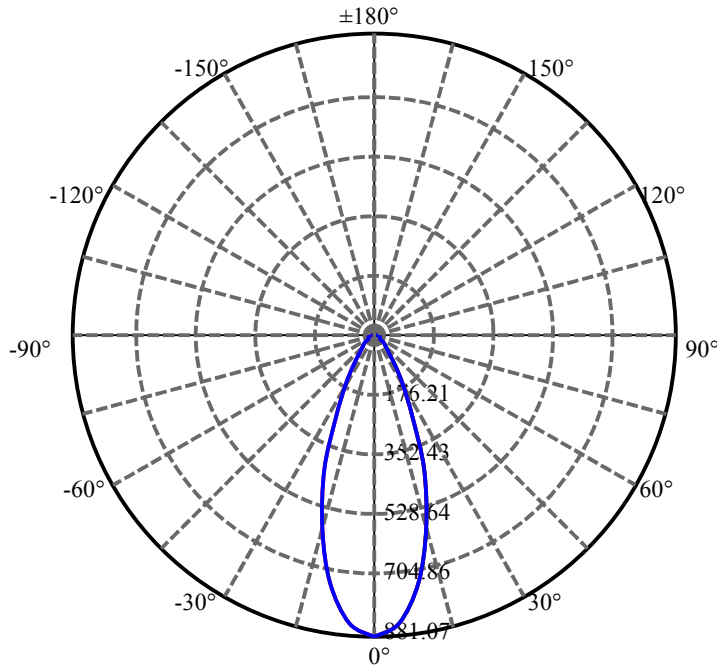
| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 0.0 | 881.072 | 0.000 | 0 | .000% | .000% |
| 5.0 | 844.158 | 20.625 | 20.625 | 3.426% | 3.838% |
| 10.0 | 732.973 | 56.419 | 77.044 | 9.372% | 14.338% |
| 15.0 | 584.831 | 78.171 | 155.215 | 12.985% | 28.886% |
| 20.0 | 418.620 | 82.698 | 237.913 | 13.737% | 44.277% |
| 25.0 | 268.692 | 72.086 | 310 | 11.974% | 57.692% |
| 30.0 | 170.255 | 55.549 | 365.549 | 9.227% | 68.030% |
| 35.0 | 108.900 | 41.107 | 406.656 | 6.828% | 75.680% |
| 40.0 | 72.316 | 30.235 | 436.891 | 5.022% | 81.307% |
| 45.0 | 47.890 | 22.257 | 459.148 | 3.697% | 85.449% |
| 50.0 | 34.249 | 16.597 | 475.745 | 2.757% | 88.538% |
| 55.0 | 25.439 | 12.978 | 488.724 | 2.156% | 90.953% |
| 60.0 | 19.702 | 10.434 | 499.158 | 1.733% | 92.895% |
| 65.0 | 15.602 | 8.582 | 507.74 | 1.426% | 94.492% |
| 70.0 | 13.584 | 7.390 | 515.13 | 1.228% | 95.868% |
| 75.0 | 11.468 | 6.548 | 521.679 | 1.088% | 97.086% |
| 80.0 | 10.990 | 6.009 | 527.688 | .998% | 98.205% |
| 85.0 | 10.259 | 5.774 | 533.461 | .959% | 99.279% |
| 90.0 | 3.888 | 3.874 | 537.335 | .643% | 100.000% |

ZONAL LUMEN SUMMARY

| Zone | Lumens | %Lamp | %Fixt |
|---------|--------|--------|---------|
| 0-30 | 365.55 | 60.72% | 68.03% |
| 0-40 | 436.89 | 72.57% | 81.31% |
| 0-60 | 499.16 | 82.92% | 92.90% |
| 0-90 | 533.46 | 88.61% | 99.28% |
| 0-120 | 533.46 | 88.61% | 99.28% |
| 0-180 | 537.33 | 89.26% | 100.00% |
| 60-90 | 44.74 | 7.43% | 8.33% |
| 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% |
| 0-38.84 | 429.87 | 71.41% | 80.00% |

ZONAL LUMEN SUMMARY

| | |
|---------|--------|
| 0-10 | 77.04 |
| 10-20 | 160.87 |
| 20-30 | 127.64 |
| 30-40 | 71.34 |
| 40-50 | 38.85 |
| 50-60 | 23.41 |
| 60-70 | 15.97 |
| 70-80 | 12.56 |
| 80-90 | 5.77 |
| 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: —————

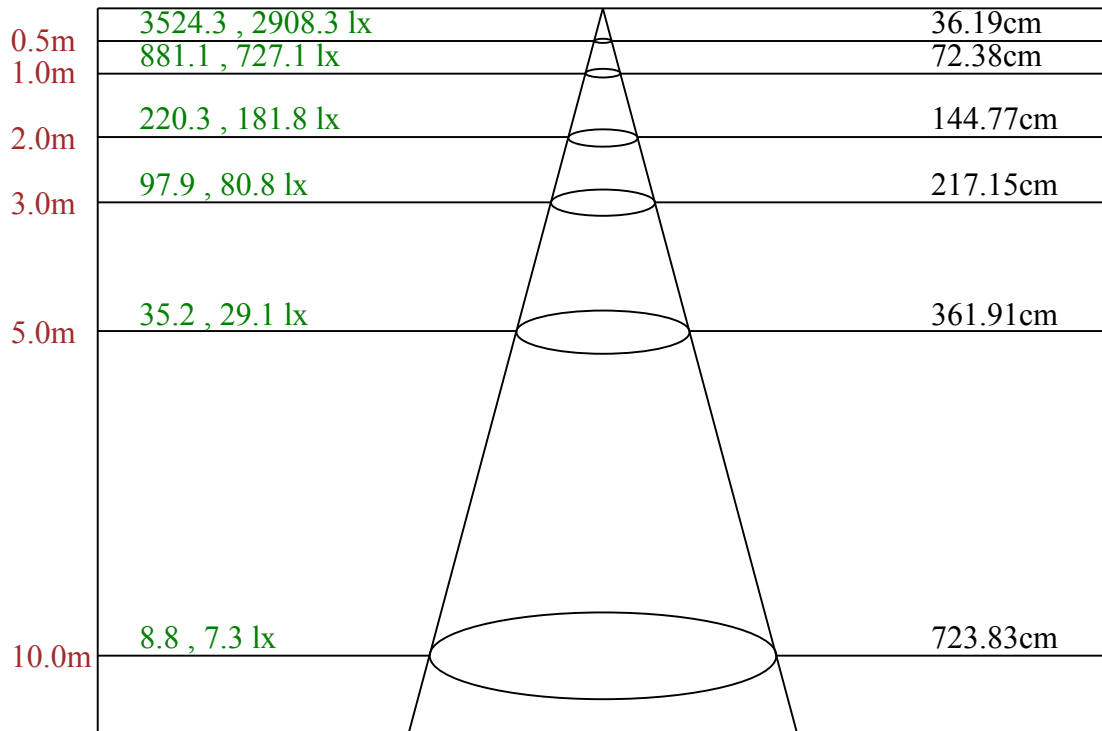
C90/C270: —————

Field angle(10%Imax):C0/180Left:37.8 Right:37.8

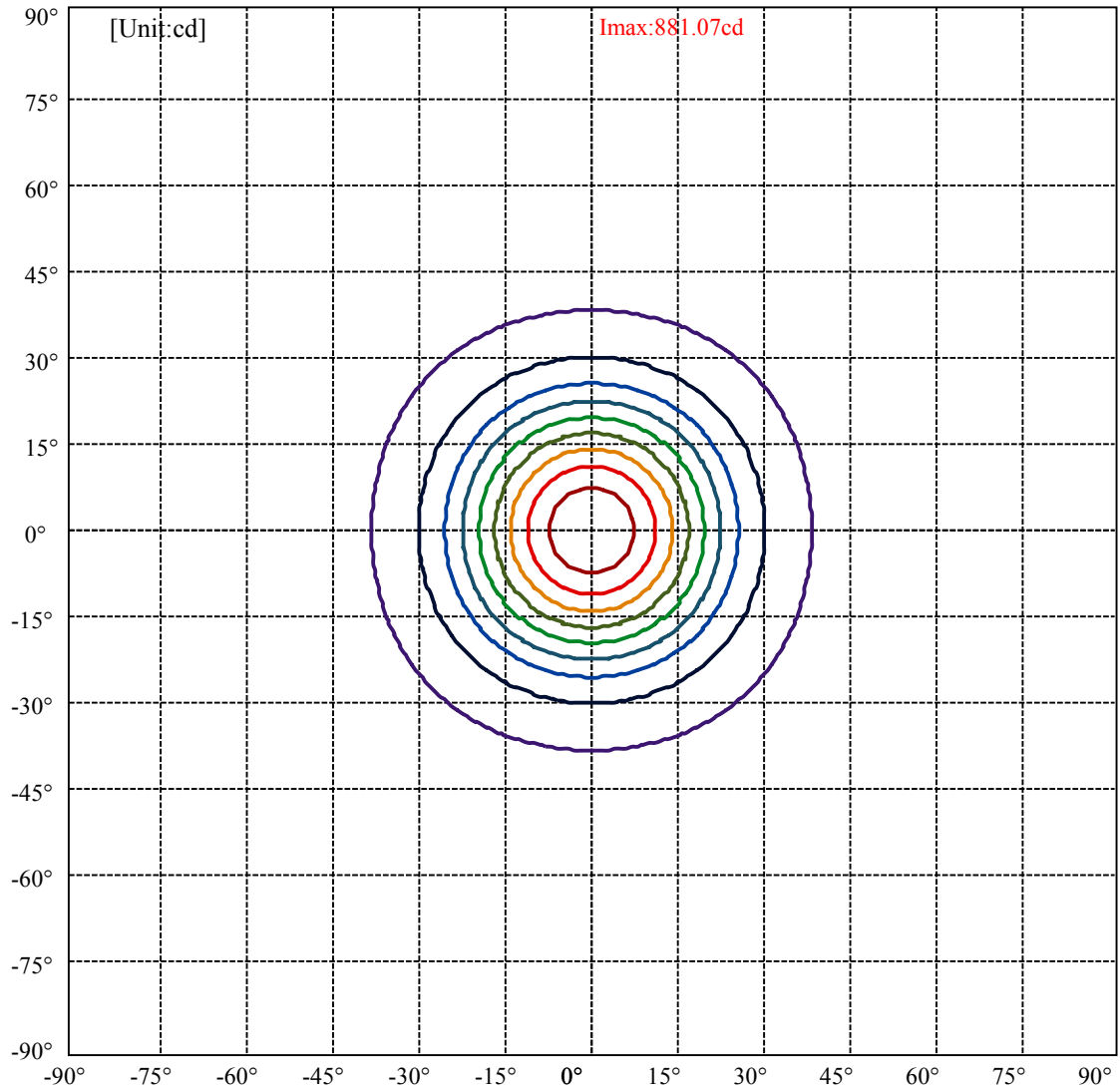
:C90/270Left:37.8 Right:37.8

Beam Angle(50%Imax):C0/180Left:19.3 Right:19.3

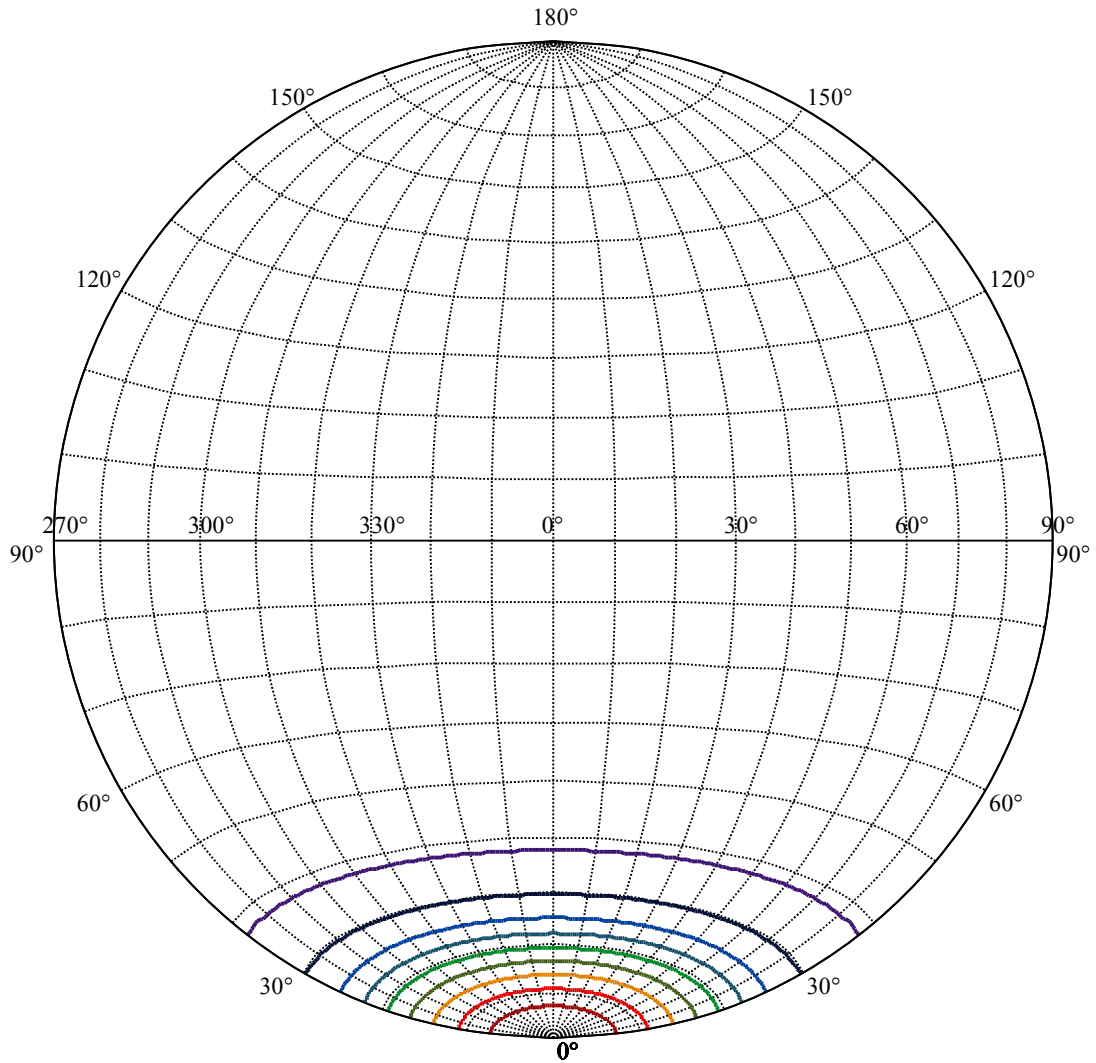
:C90/270Left:19.3 Right:19.3



Max , Ave Beam angle of C0 plane 39.79



| | |
|-------------------|---|
| (10%Imax) 88.1072 | — |
| (20%Imax) 176.214 | — |
| (30%Imax) 264.322 | — |
| (40%Imax) 352.429 | — |
| (50%Imax) 440.536 | — |
| (60%Imax) 528.643 | — |
| (70%Imax) 616.75 | — |
| (80%Imax) 704.857 | — |
| (90%Imax) 792.965 | — |



House

[Unit:cd]

Road

Imax:881.07

(10%Imax) 88.1072

(20%Imax) 176.214

(30%Imax) 264.322

(40%Imax) 352.429

(50%Imax) 440.536

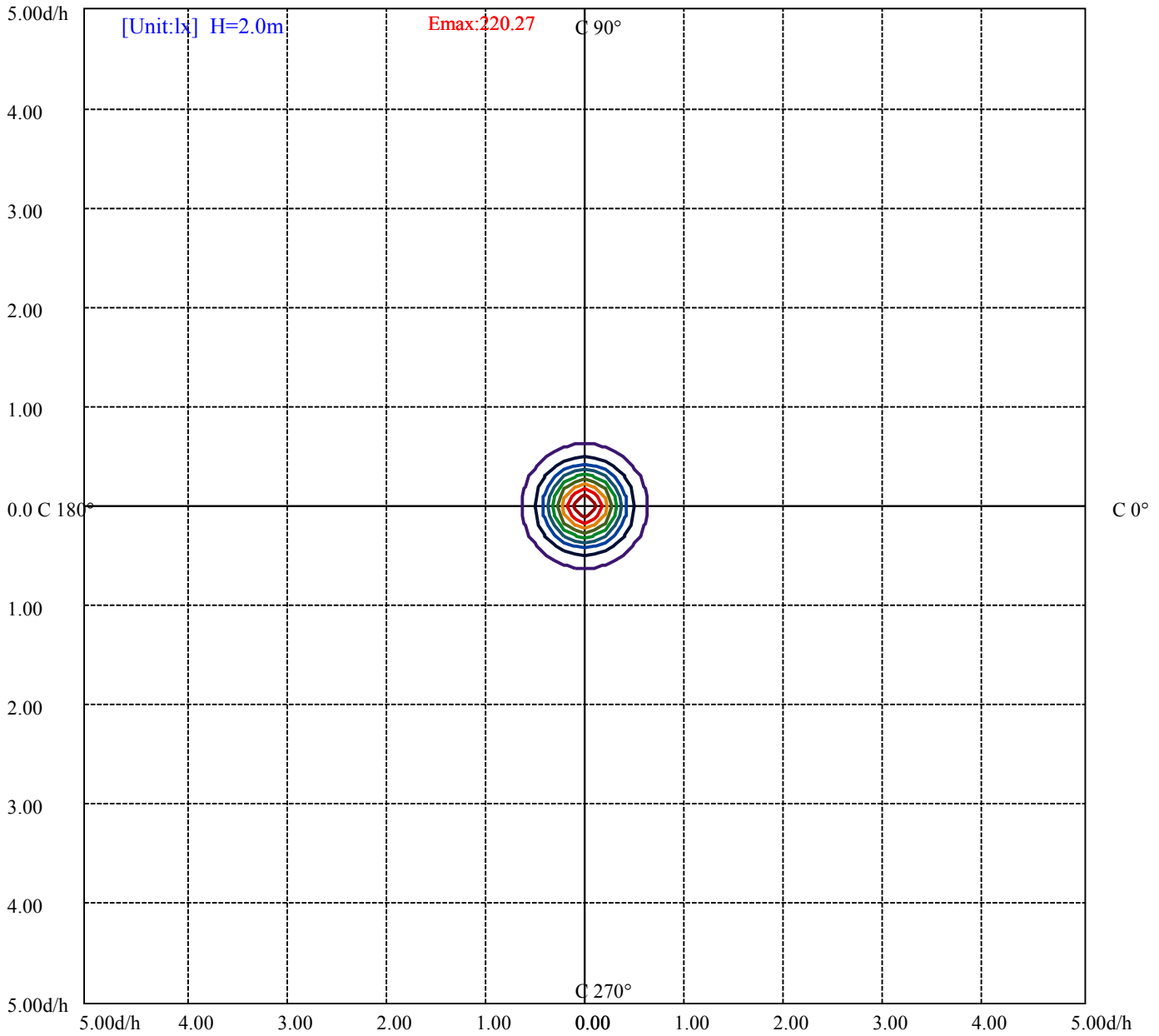
(60%Imax) 528.643

(70%Imax) 616.75

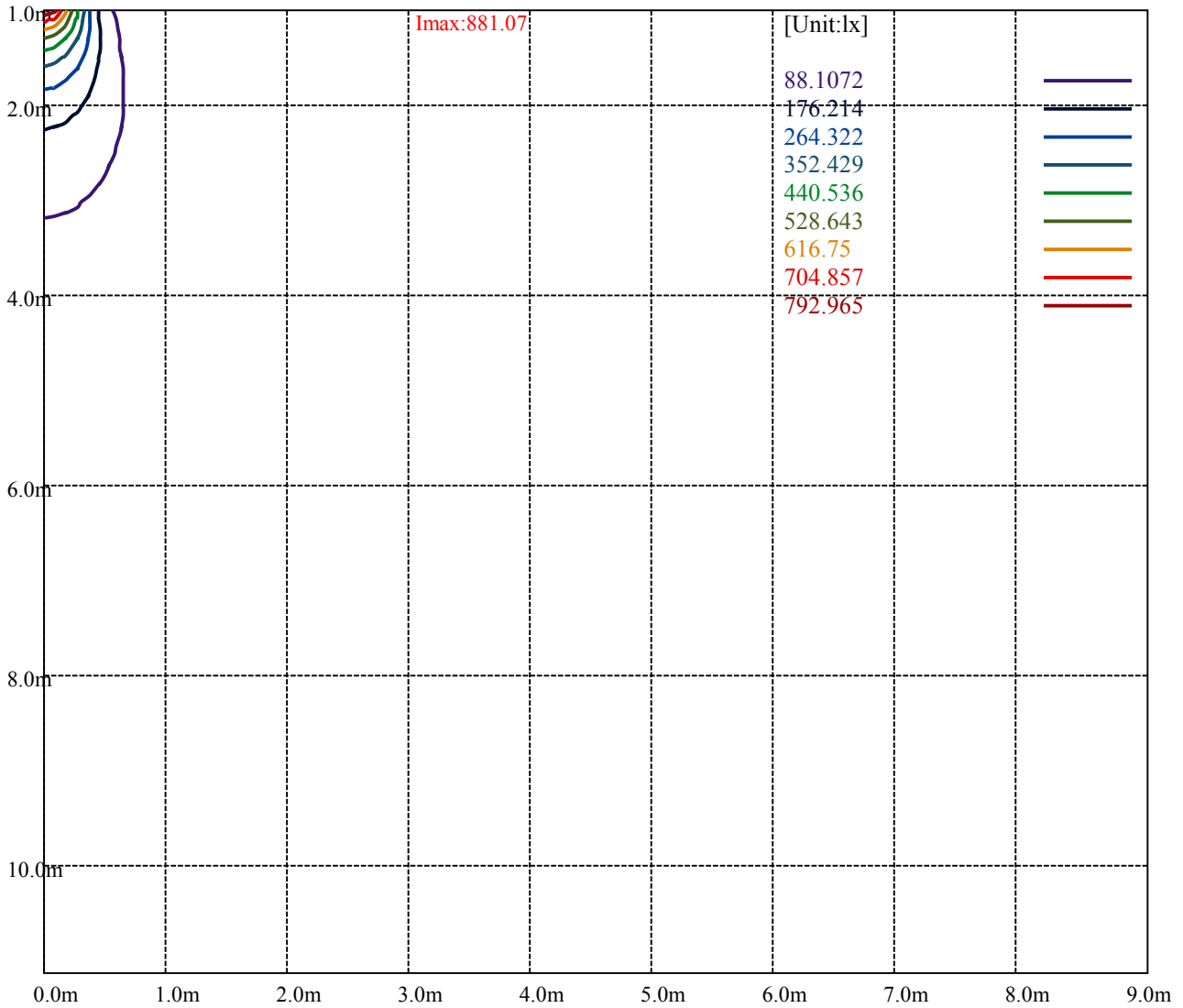
(80%Imax) 704.857

(90%Imax) 792.965





| | |
|--------------------|---|
| (10%Emax) 22.02678 | — |
| (20%Emax) 44.0535 | — |
| (30%Emax) 66.08025 | — |
| (40%Emax) 88.107 | — |
| (50%Emax) 110.1338 | — |
| (60%Emax) 132.1605 | — |
| (70%Emax) 154.1875 | — |
| (80%Emax) 176.2142 | — |
| (90%Emax) 198.241 | — |



Luminance Table

| γ | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 |
|----------|----|----|----|----|----|----|----|----|----|
| C0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C90 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

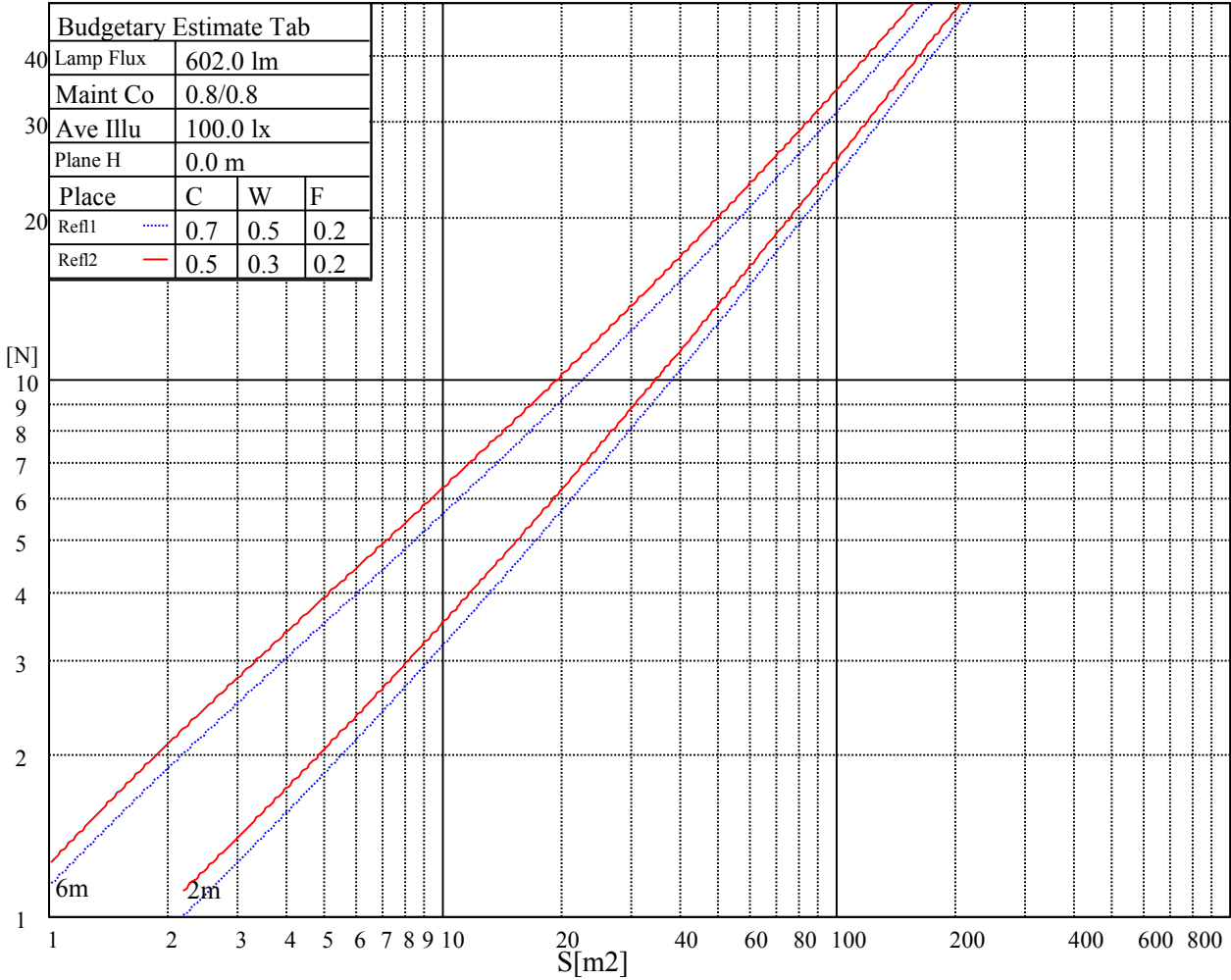
| L(Hor)(65) | L(Ver)(65) | L45(65) | L(Hor)(75) | L(Ver)(75) | L45(75) | L(Hor)(85) | L(Ver)(85) | L45(85) |
|------------|------------|---------|------------|------------|---------|------------|------------|---------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Glare Table

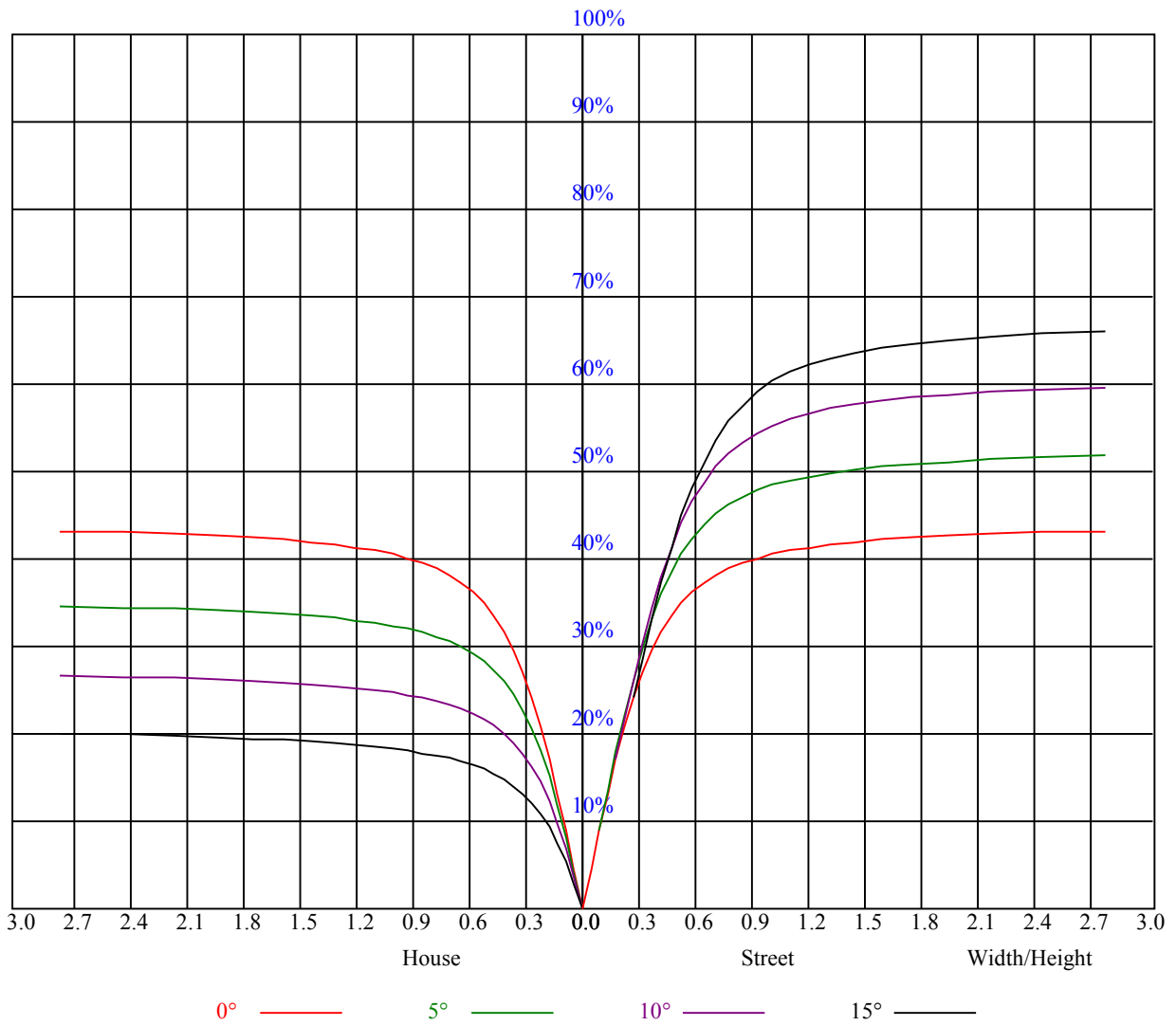
| Glare | Quality | Service Values Illuminance(lx) | | | | | | | |
|-------|---------|--------------------------------|------|------|-------|-------|-------|-------|-------|
| 1.15 | A | 2000 | 1000 | 500 | <=300 | | | | |
| 1.5 | B | | 2000 | 1000 | 500 | <=300 | | | |
| 1.85 | C | | | 2000 | 1000 | 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 | 1.04 | 1.04 | 1.04 | 0.99 | 0.99 | 0.99 | 0.95 | 0.95 | 0.95 | 0.91 | 0.91 | 0.91 | 0.89 |
| 1 | 0.97 | 0.94 | 0.92 | 0.95 | 0.93 | 0.91 | 0.92 | 0.90 | 0.88 | 0.88 | 0.87 | 0.85 | 0.85 | 0.84 | 0.83 | 0.81 |
| 2 | 0.90 | 0.85 | 0.82 | 0.88 | 0.84 | 0.81 | 0.85 | 0.82 | 0.79 | 0.82 | 0.80 | 0.78 | 0.80 | 0.78 | 0.76 | 0.74 |
| 3 | 0.83 | 0.78 | 0.74 | 0.82 | 0.77 | 0.74 | 0.79 | 0.76 | 0.72 | 0.77 | 0.74 | 0.71 | 0.75 | 0.72 | 0.70 | 0.69 |
| 4 | 0.77 | 0.72 | 0.68 | 0.76 | 0.71 | 0.68 | 0.74 | 0.70 | 0.67 | 0.73 | 0.69 | 0.66 | 0.71 | 0.68 | 0.65 | 0.64 |
| 5 | 0.73 | 0.67 | 0.63 | 0.72 | 0.67 | 0.63 | 0.70 | 0.66 | 0.62 | 0.69 | 0.65 | 0.62 | 0.67 | 0.64 | 0.61 | 0.60 |
| 6 | 0.68 | 0.63 | 0.59 | 0.68 | 0.62 | 0.58 | 0.66 | 0.62 | 0.58 | 0.65 | 0.61 | 0.58 | 0.64 | 0.60 | 0.57 | 0.56 |
| 7 | 0.64 | 0.59 | 0.55 | 0.64 | 0.59 | 0.55 | 0.63 | 0.58 | 0.54 | 0.62 | 0.57 | 0.54 | 0.61 | 0.57 | 0.54 | 0.53 |
| 8 | 0.61 | 0.56 | 0.52 | 0.60 | 0.55 | 0.52 | 0.59 | 0.55 | 0.51 | 0.59 | 0.54 | 0.51 | 0.58 | 0.54 | 0.51 | 0.50 |
| 9 | 0.58 | 0.53 | 0.49 | 0.57 | 0.52 | 0.49 | 0.57 | 0.52 | 0.49 | 0.56 | 0.52 | 0.48 | 0.55 | 0.51 | 0.48 | 0.47 |
| 10 | 0.55 | 0.50 | 0.46 | 0.55 | 0.50 | 0.46 | 0.54 | 0.49 | 0.46 | 0.53 | 0.49 | 0.46 | 0.53 | 0.49 | 0.46 | 0.45 |



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 | 884.19 | 821.98 | 677.81 | 513.39 | 339.92 | 207.90 | 133.65 | 86.85 | 58.56 |
| 45.0 | 875.53 | 846.06 | 728.55 | 568.35 | 407.53 | 256.89 | 156.54 | 98.27 | 66.60 |
| 90.0 | 885.54 | 881.55 | 804.04 | 677.64 | 524.36 | 357.41 | 229.89 | 149.79 | 95.34 |
| 135.0 | 879.02 | 905.96 | 857.19 | 753.30 | 591.36 | 412.48 | 268.31 | 171.79 | 111.88 |
| 180.0 | 884.19 | 862.03 | 757.52 | 599.40 | 426.32 | 285.47 | 179.89 | 110.98 | 75.43 |
| 225.0 | 875.53 | 827.10 | 694.18 | 544.78 | 387.79 | 247.22 | 153.73 | 99.79 | 65.36 |
| 270.0 | 885.54 | 819.06 | 693.96 | 546.24 | 364.39 | 205.37 | 127.74 | 81.17 | 53.78 |
| 315.0 | 879.02 | 789.53 | 650.53 | 475.54 | 307.29 | 176.79 | 112.28 | 72.56 | 51.58 |
| 360.0 | 884.19 | 821.98 | 677.81 | 513.39 | 339.92 | 207.90 | 133.65 | 86.85 | 58.56 |
| C/ γ (°) | 45.0 | 50.0 | 55.0 | 60.0 | 65.0 | 70.0 | 75.0 | 80.0 | 85.0 |
| 0.0 | 40.84 | 29.76 | 21.60 | 17.27 | 13.39 | 11.81 | 10.80 | 9.96 | 9.00 |
| 45.0 | 44.61 | 32.23 | 25.03 | 18.90 | 14.91 | 13.50 | 10.80 | 11.53 | 8.78 |
| 90.0 | 59.40 | 41.29 | 29.31 | 20.70 | 16.48 | 14.40 | 10.69 | 10.35 | 9.62 |
| 135.0 | 72.17 | 49.44 | 34.59 | 24.69 | 18.79 | 16.37 | 12.21 | 10.97 | 10.41 |
| 180.0 | 49.28 | 35.04 | 26.44 | 21.54 | 16.88 | 14.57 | 12.71 | 10.74 | 10.07 |
| 225.0 | 44.27 | 32.29 | 25.26 | 20.31 | 15.92 | 13.39 | 11.93 | 13.28 | 15.36 |
| 270.0 | 36.62 | 27.90 | 21.43 | 17.94 | 15.08 | 12.88 | 11.70 | 10.86 | 9.56 |
| 315.0 | 35.94 | 26.04 | 19.86 | 16.26 | 13.39 | 11.76 | 10.91 | 10.24 | 9.28 |
| 360.0 | 40.84 | 29.76 | 21.60 | 17.27 | 13.39 | 11.81 | 10.80 | 9.96 | 9.00 |
| C/ γ (°) | 90.0 | | | | | | | | |
| 0.0 | 4.50 | | | | | | | | |
| 45.0 | 3.43 | | | | | | | | |
| 90.0 | 2.87 | | | | | | | | |
| 135.0 | 3.49 | | | | | | | | |
| 180.0 | 3.26 | | | | | | | | |
| 225.0 | 4.56 | | | | | | | | |
| 270.0 | 4.56 | | | | | | | | |
| 315.0 | 4.44 | | | | | | | | |
| 360.0 | 4.50 | | | | | | | | |