
Nata

LumCAT: 1678-A
Luminaire: 92.70.064.00+92.70.147.00
Report No: NT2017092514
Test No: GC2017092514
LampCAT: CITIZEN CLU028
Lamp flux(lm): 1463.0
Number of Lamps: 1
Length(mm): 46
Phm Type: C

Voltage(V): 35.5000
Current(A): 0.3000
Power (W): 10.6500
PF: 0.0000
Ballast type: DC
Width(mm): 46
Height(mm): 0

Photometric Results

Lumens(lm): 1195.15
Efficiency(%): 81.69%
Lumens(lm)/Power(W): 112.22
Central intensity(cd): 2265.020
Maximum intensity(cd): 2265.020
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=39.3
 [C90/270]Total=39.3
Field angle(10%Imax): [C0/180]Total=69.2
 [C90/270]Total=69.2
Maximum s/h(1/2): C0_180=0.65 C90_270=0.65
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(%): 81.69%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.508%

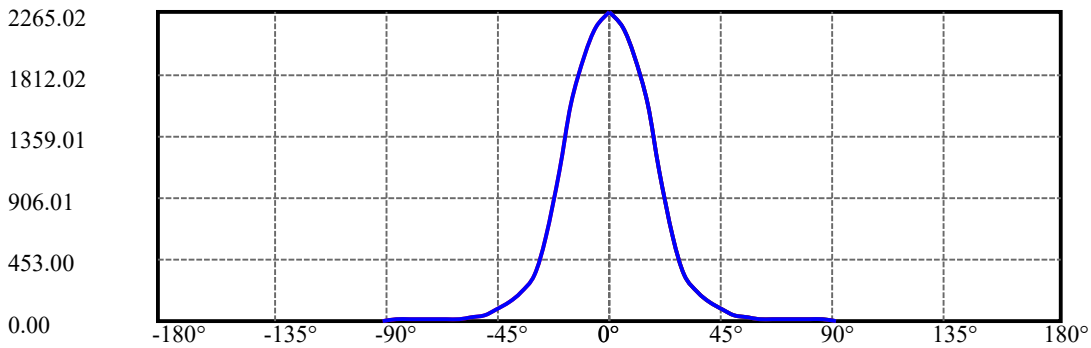
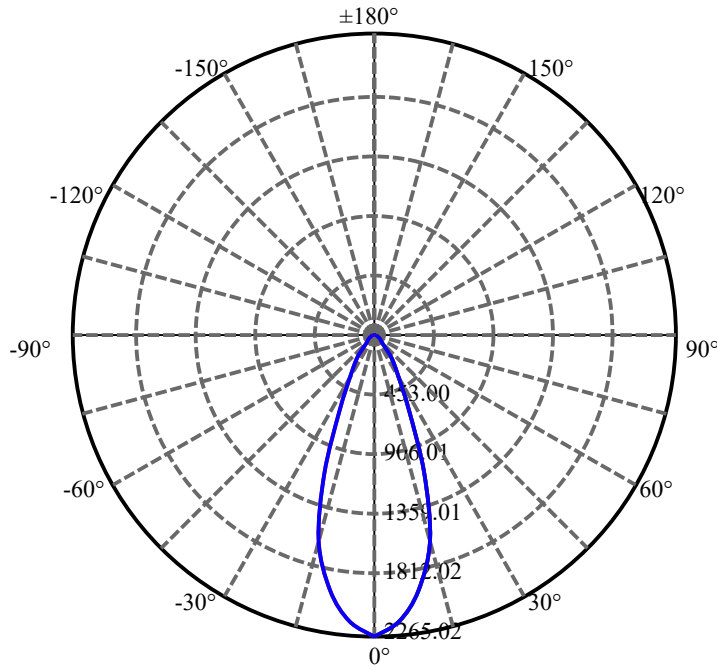
| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 0.0 | 2265.020 | 0.000 | 0 | .000% | .000% |
| 5.0 | 2157.179 | 52.866 | 52.866 | 3.614% | 4.423% |
| 10.0 | 1942.665 | 146.664 | 199.53 | 10.025% | 16.695% |
| 15.0 | 1596.429 | 209.937 | 409.467 | 14.350% | 34.261% |
| 20.0 | 1098.712 | 222.118 | 631.585 | 15.182% | 52.846% |
| 25.0 | 613.638 | 179.594 | 811.179 | 12.276% | 67.873% |
| 30.0 | 339.973 | 120.680 | 931.859 | 8.249% | 77.970% |
| 35.0 | 216.833 | 81.994 | 1013.853 | 5.604% | 84.831% |
| 40.0 | 136.189 | 58.899 | 1072.752 | 4.026% | 89.759% |
| 45.0 | 82.296 | 40.454 | 1113.206 | 2.765% | 93.144% |
| 50.0 | 48.766 | 26.483 | 1139.689 | 1.810% | 95.360% |
| 55.0 | 27.033 | 16.481 | 1156.17 | 1.127% | 96.739% |
| 60.0 | 12.739 | 9.193 | 1165.363 | .628% | 97.508% |
| 65.0 | 9.621 | 5.436 | 1170.799 | .372% | 97.963% |
| 70.0 | 9.201 | 4.766 | 1175.565 | .326% | 98.361% |
| 75.0 | 9.422 | 4.868 | 1180.432 | .333% | 98.769% |
| 80.0 | 10.185 | 5.246 | 1185.679 | .359% | 99.208% |
| 85.0 | 9.766 | 5.421 | 1191.1 | .371% | 99.661% |
| 90.0 | 5.024 | 4.049 | 1195.149 | .277% | 100.000% |

ZONAL LUMEN SUMMARY

| Zone | Lumens | %Lamp | %Fixt |
|---------|---------|--------|---------|
| 0-30 | 931.86 | 63.70% | 77.97% |
| 0-40 | 1072.75 | 73.33% | 89.76% |
| 0-60 | 1165.36 | 79.66% | 97.51% |
| 0-90 | 1191.10 | 81.41% | 99.66% |
| 0-120 | 1191.10 | 81.41% | 99.66% |
| 0-180 | 1195.15 | 81.69% | 100.00% |
| 60-90 | 34.93 | 2.39% | 2.92% |
| 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% |
| 0-31.48 | 956.12 | 65.35% | 80.00% |

ZONAL LUMEN SUMMARY

| | |
|---------|--------|
| 0-10 | 199.53 |
| 10-20 | 432.05 |
| 20-30 | 300.27 |
| 30-40 | 140.89 |
| 40-50 | 66.94 |
| 50-60 | 25.67 |
| 60-70 | 10.20 |
| 70-80 | 10.11 |
| 80-90 | 5.42 |
| 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 |



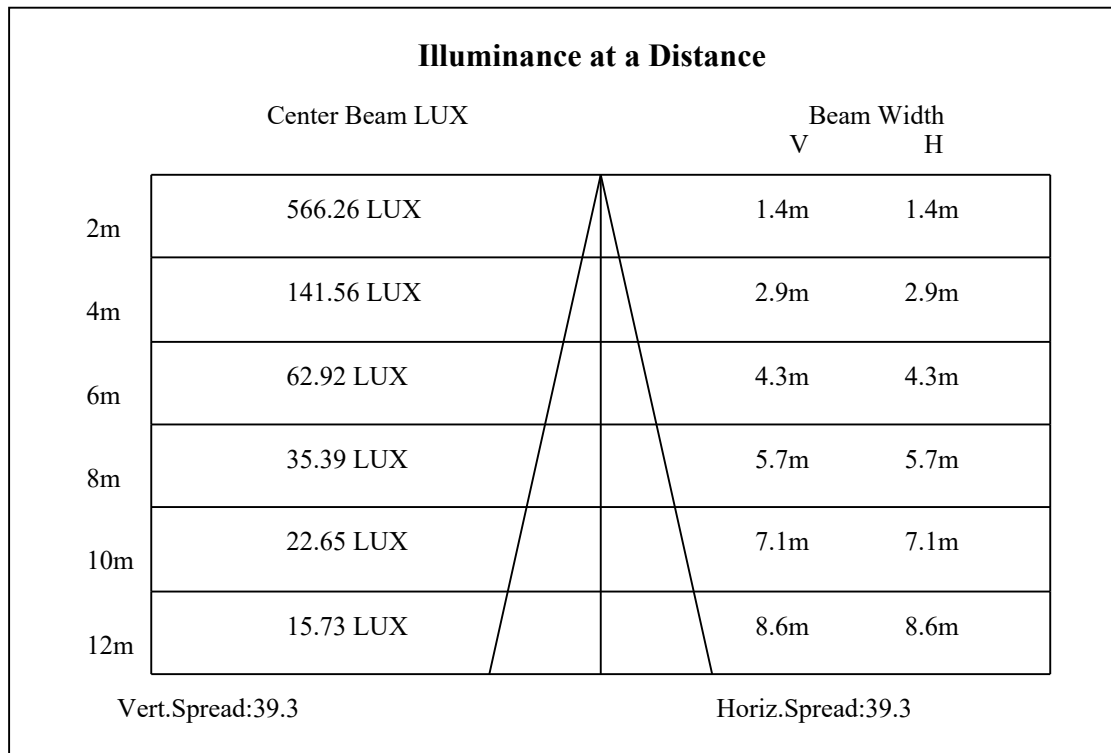
C0(Max): —————

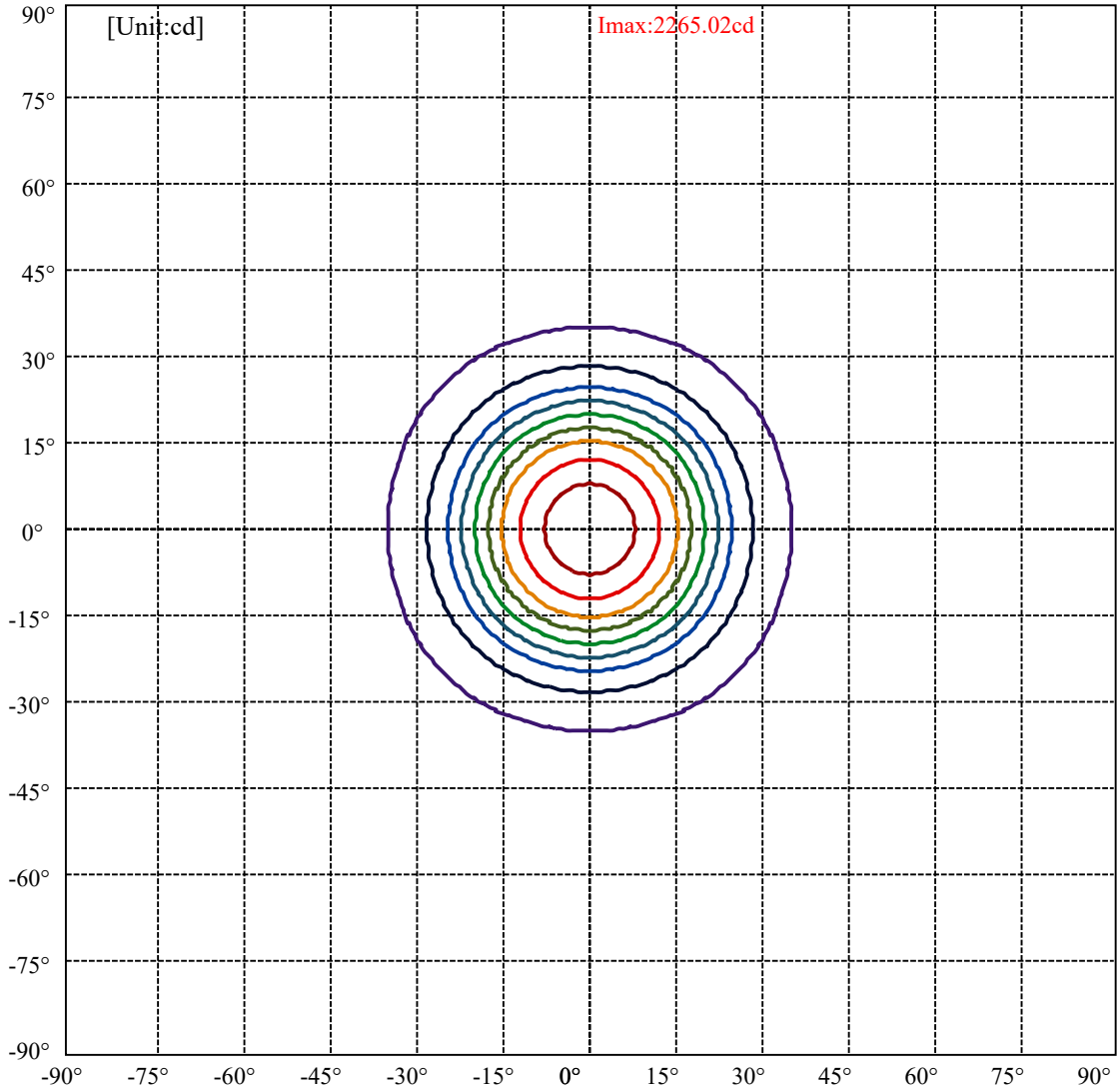
C0/C180: —————

C90/C270: —————

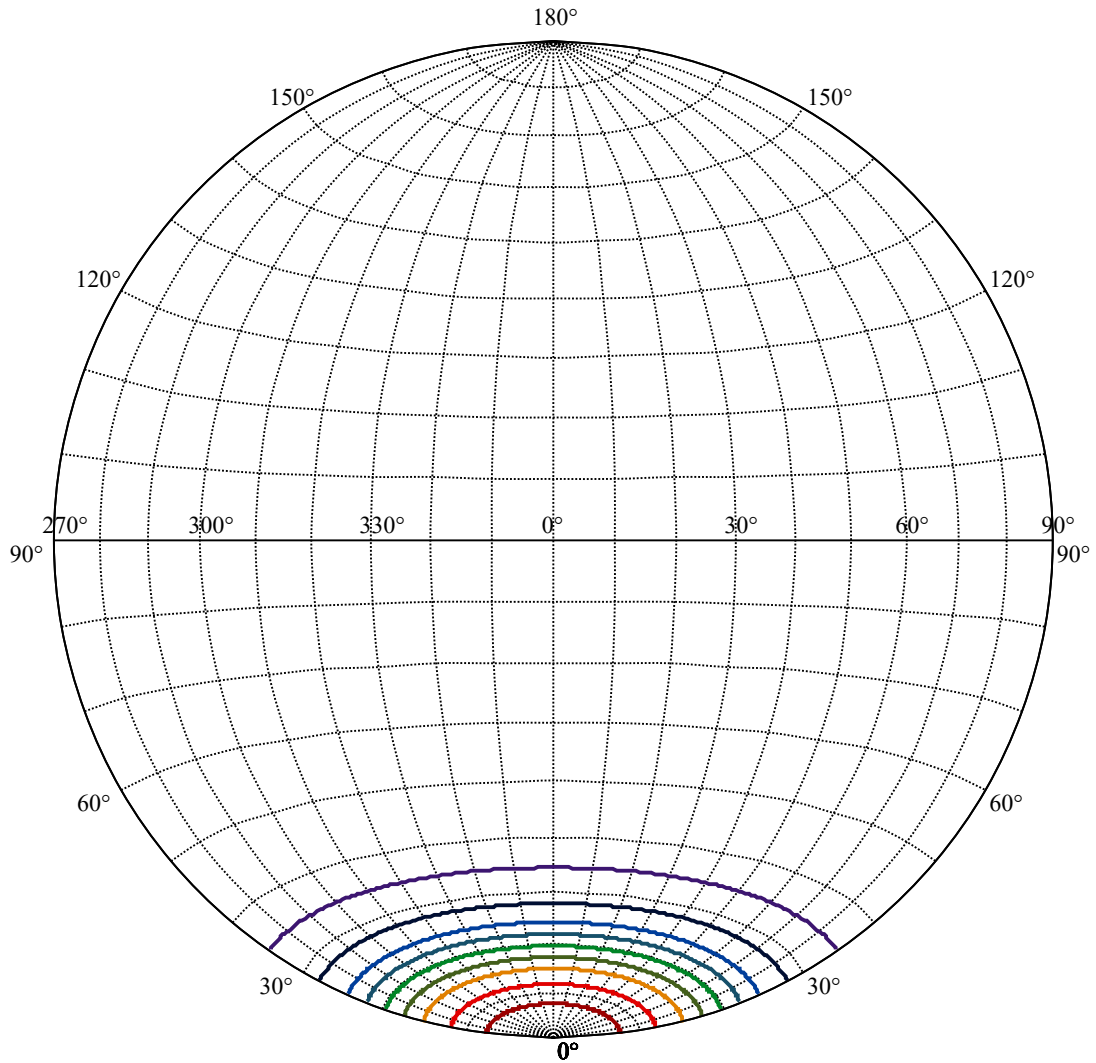
Field angle(10%Imax):C0/180Left:34.6 Right:34.6
:C90/270Left:34.6 Right:34.6

Beam Angle(50%Imax):C0/180Left:19.7 Right:19.7
:C90/270Left:19.7 Right:19.7





| | |
|-------------------|---|
| (10%Imax) 226.502 | — |
| (20%Imax) 453.004 | — |
| (30%Imax) 679.506 | — |
| (40%Imax) 906.008 | — |
| (50%Imax) 1132.51 | — |
| (60%Imax) 1359.01 | — |
| (70%Imax) 1585.51 | — |
| (80%Imax) 1812.02 | — |
| (90%Imax) 2038.52 | — |



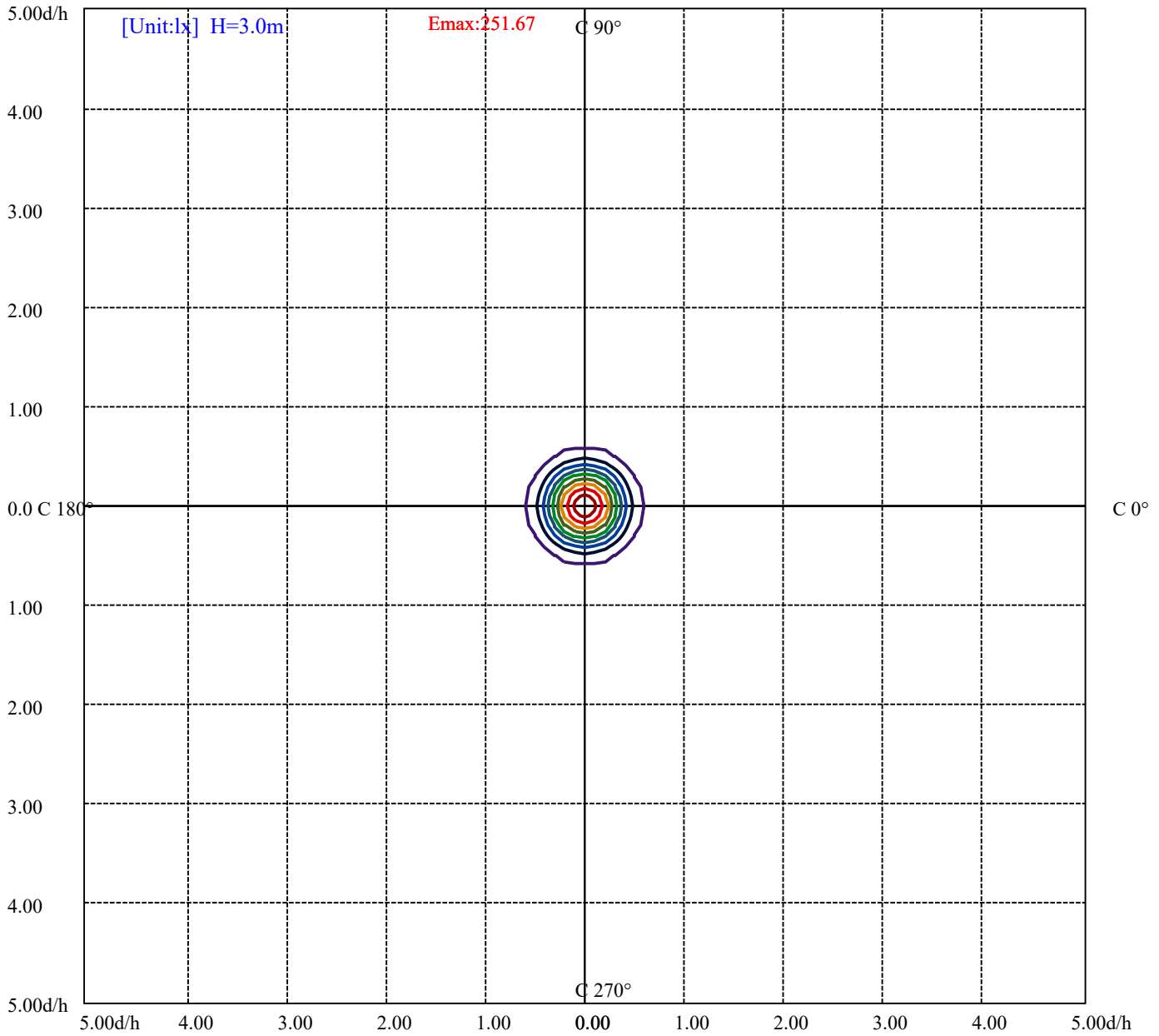
House

[Unit:cd]

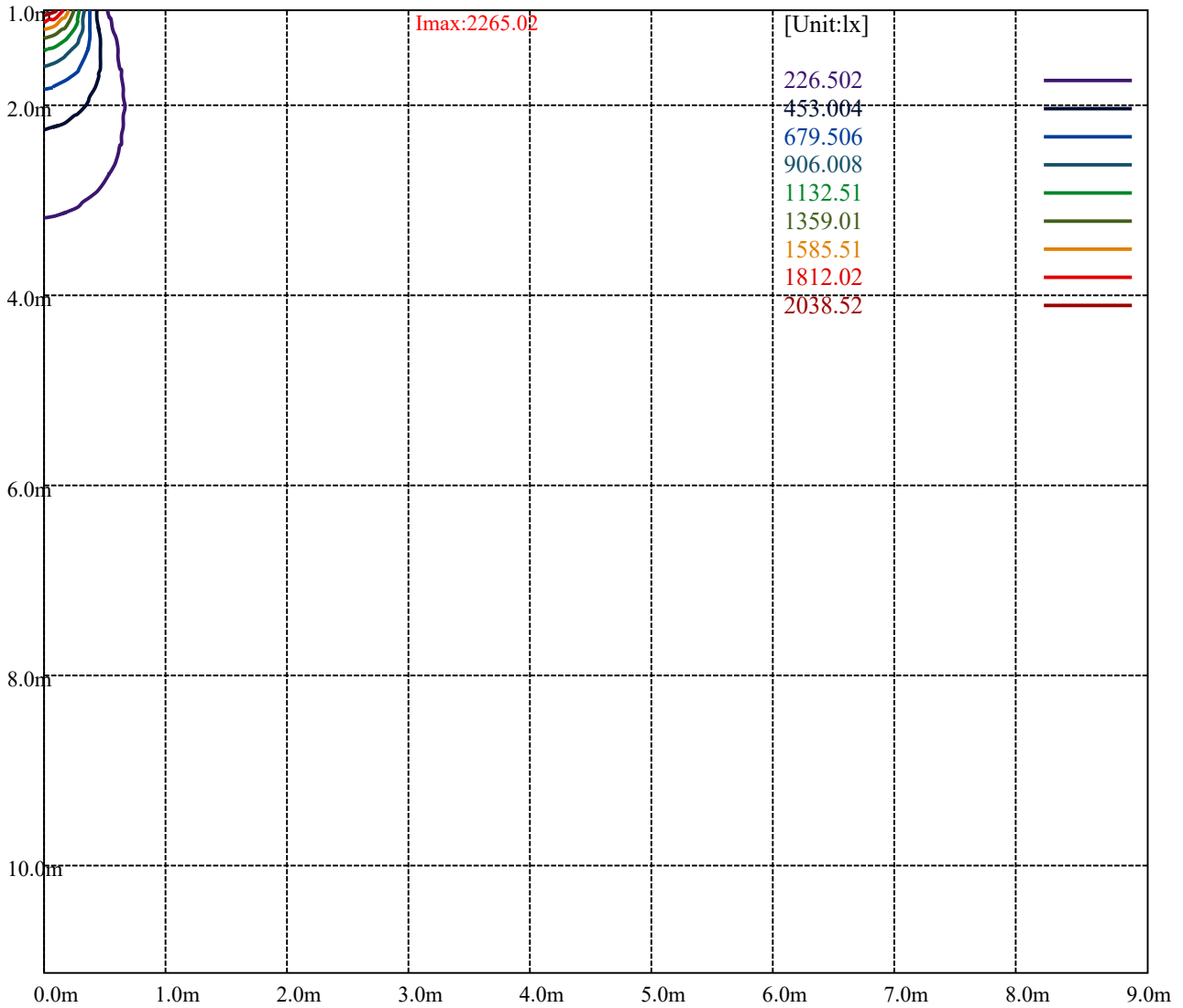
Road

Imax:2265.02

| | | |
|-----------|---------|---|
| (10%Imax) | 226.502 | — |
| (20%Imax) | 453.004 | — |
| (30%Imax) | 679.506 | — |
| (40%Imax) | 906.008 | — |
| (50%Imax) | 1132.51 | — |
| (60%Imax) | 1359.01 | — |
| (70%Imax) | 1585.51 | — |
| (80%Imax) | 1812.02 | — |
| (90%Imax) | 2038.52 | — |



| | |
|--------------------|---|
| (10%Emax) 25.16689 | — |
| (20%Emax) 50.33366 | — |
| (30%Emax) 75.50056 | — |
| (40%Emax) 100.6674 | — |
| (50%Emax) 125.8344 | — |
| (60%Emax) 151.0011 | — |
| (70%Emax) 176.1678 | — |
| (80%Emax) 201.3344 | — |
| (90%Emax) 226.5022 | — |



Luminance Table

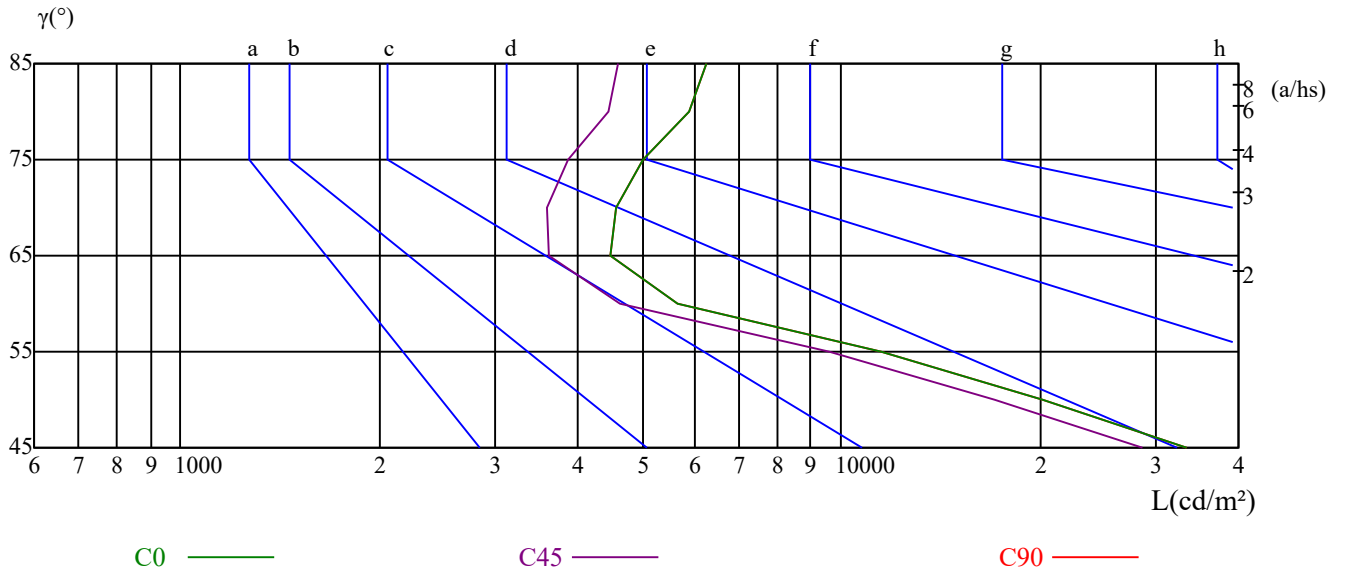
| γ | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 |
|----------|-------|-------|-------|------|------|------|------|------|------|
| C0 | 33290 | 20174 | 11532 | 5654 | 4485 | 4554 | 5010 | 5900 | 6263 |
| C45 | 28612 | 17080 | 9612 | 4635 | 3613 | 3598 | 3873 | 4449 | 4588 |
| C90 | 33290 | 20174 | 11532 | 5654 | 4485 | 4554 | 5010 | 5900 | 6263 |

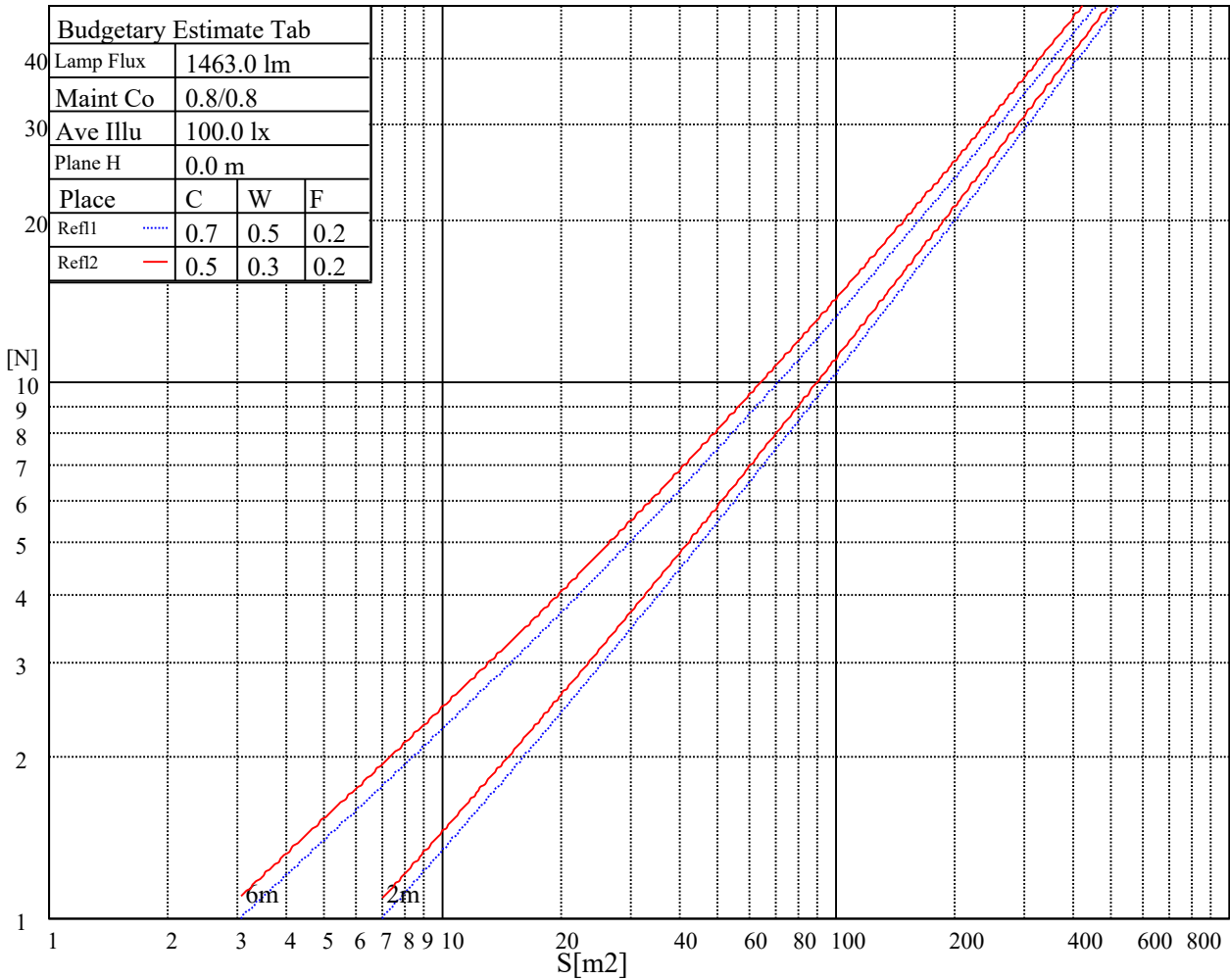
| L(Hor)(65) | L(Ver)(65) | L45(65) | L(Hor)(75) | L(Ver)(75) | L45(75) | L(Hor)(85) | L(Ver)(85) | L45(85) |
|------------|------------|---------|------------|------------|---------|------------|------------|---------|
| 10759 | 10759 | 10759 | 17203 | 17203 | 17203 | 52953 | 52953 | 52953 |

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 | 0.97 | 0.97 | 0.97 | 0.95 | 0.95 | 0.95 | 0.91 | 0.91 | 0.91 | 0.87 | 0.87 | 0.87 | 0.83 | 0.83 | 0.83 | 0.82 |
| 1 | 0.90 | 0.88 | 0.86 | 0.89 | 0.87 | 0.85 | 0.85 | 0.84 | 0.82 | 0.82 | 0.81 | 0.80 | 0.79 | 0.79 | 0.78 | 0.76 |
| 2 | 0.84 | 0.81 | 0.78 | 0.83 | 0.80 | 0.78 | 0.80 | 0.78 | 0.76 | 0.78 | 0.76 | 0.74 | 0.76 | 0.74 | 0.73 | 0.71 |
| 3 | 0.79 | 0.75 | 0.72 | 0.78 | 0.74 | 0.72 | 0.76 | 0.73 | 0.70 | 0.74 | 0.71 | 0.69 | 0.72 | 0.70 | 0.68 | 0.67 |
| 4 | 0.75 | 0.70 | 0.67 | 0.74 | 0.70 | 0.67 | 0.72 | 0.68 | 0.66 | 0.70 | 0.67 | 0.65 | 0.69 | 0.66 | 0.64 | 0.63 |
| 5 | 0.70 | 0.66 | 0.63 | 0.70 | 0.65 | 0.62 | 0.68 | 0.65 | 0.62 | 0.67 | 0.64 | 0.61 | 0.66 | 0.63 | 0.61 | 0.60 |
| 6 | 0.67 | 0.62 | 0.59 | 0.66 | 0.62 | 0.59 | 0.65 | 0.61 | 0.58 | 0.64 | 0.60 | 0.58 | 0.63 | 0.60 | 0.57 | 0.56 |
| 7 | 0.63 | 0.59 | 0.56 | 0.63 | 0.58 | 0.55 | 0.62 | 0.58 | 0.55 | 0.61 | 0.57 | 0.55 | 0.60 | 0.57 | 0.55 | 0.53 |
| 8 | 0.60 | 0.56 | 0.53 | 0.60 | 0.55 | 0.53 | 0.59 | 0.55 | 0.52 | 0.58 | 0.55 | 0.52 | 0.57 | 0.54 | 0.52 | 0.51 |
| 9 | 0.57 | 0.53 | 0.50 | 0.57 | 0.53 | 0.50 | 0.56 | 0.52 | 0.50 | 0.56 | 0.52 | 0.50 | 0.55 | 0.52 | 0.49 | 0.48 |
| 10 | 0.55 | 0.51 | 0.48 | 0.55 | 0.50 | 0.48 | 0.54 | 0.50 | 0.47 | 0.53 | 0.50 | 0.47 | 0.53 | 0.50 | 0.47 | 0.46 |

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 | 2267.77 | 2120.22 | 1888.99 | 1534.42 | 1048.82 | 554.97 | 324.28 | 197.43 | 128.72 |
| 45.0 | 2268.87 | 2127.38 | 1922.57 | 1532.22 | 1016.89 | 530.74 | 300.06 | 184.77 | 117.16 |
| 90.0 | 2268.87 | 2137.84 | 1902.75 | 1537.17 | 1015.79 | 534.38 | 309.69 | 196.66 | 121.73 |
| 135.0 | 2254.56 | 2195.10 | 2000.20 | 1678.67 | 1231.61 | 704.17 | 390.35 | 278.59 | 154.10 |
| 180.0 | 2267.77 | 2185.19 | 1963.86 | 1633.52 | 1087.31 | 629.24 | 348.73 | 210.92 | 142.76 |
| 225.0 | 2268.87 | 2185.19 | 1984.23 | 1656.10 | 1098.27 | 675.38 | 360.34 | 215.99 | 142.27 |
| 270.0 | 2268.87 | 2182.99 | 2002.40 | 1689.68 | 1245.93 | 724.54 | 385.39 | 248.52 | 150.85 |
| 315.0 | 2254.56 | 2123.53 | 1876.32 | 1509.65 | 1045.08 | 555.68 | 300.94 | 201.78 | 131.92 |
| 360.0 | 2267.77 | 2120.22 | 1888.99 | 1534.42 | 1048.82 | 554.97 | 324.28 | 197.43 | 128.72 |
| C/γ(°) | 45.0 | 50.0 | 55.0 | 60.0 | 65.0 | 70.0 | 75.0 | 80.0 | 85.0 |
| 0.0 | 81.48 | 47.84 | 27.31 | 13.10 | 10.41 | 10.13 | 10.74 | 11.51 | 10.30 |
| 45.0 | 70.31 | 40.69 | 22.19 | 11.51 | 9.14 | 8.53 | 8.97 | 9.86 | 8.75 |
| 90.0 | 73.17 | 43.33 | 23.29 | 10.85 | 9.47 | 9.19 | 9.74 | 10.96 | 10.57 |
| 135.0 | 91.01 | 55.99 | 29.23 | 12.61 | 10.02 | 9.86 | 10.08 | 10.57 | 10.96 |
| 180.0 | 85.89 | 50.54 | 28.08 | 12.39 | 9.58 | 9.19 | 9.41 | 9.86 | 9.03 |
| 225.0 | 85.17 | 48.78 | 26.65 | 13.82 | 9.52 | 8.81 | 8.75 | 9.86 | 9.80 |
| 270.0 | 91.56 | 54.45 | 33.03 | 15.75 | 9.36 | 8.64 | 8.48 | 9.86 | 9.91 |
| 315.0 | 79.78 | 48.50 | 26.48 | 11.89 | 9.47 | 9.25 | 9.19 | 9.03 | 8.81 |
| 360.0 | 81.48 | 47.84 | 27.31 | 13.10 | 10.41 | 10.13 | 10.74 | 11.51 | 10.30 |
| C/γ(°) | 90.0 | | | | | | | | |
| 0.0 | 4.96 | | | | | | | | |
| 45.0 | 4.90 | | | | | | | | |
| 90.0 | 4.96 | | | | | | | | |
| 135.0 | 5.01 | | | | | | | | |
| 180.0 | 5.01 | | | | | | | | |
| 225.0 | 4.96 | | | | | | | | |
| 270.0 | 5.18 | | | | | | | | |
| 315.0 | 5.23 | | | | | | | | |
| 360.0 | 4.96 | | | | | | | | |