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Nata

| | |
|----------------------------|----------------------|
| LumCAT: 2-1537-E | |
| Luminaire: 92.76.323.00 | |
| Report No: NATA0100 | Voltage(V): 218.0000 |
| Test No: GC2019111513 | Current(A): 0.0810 |
| LampCAT: LUMENS EDC-57-20W | Power (W): 17.6000 |
| Lamp flux(lm): 1515.0 | PF: 0.9940 |
| Number of Lamps: 1 | Ballast type: DC |
| Length(mm): 0 | Width(mm): 0 |
| Phm Type: C | Height(mm): 0 |

Photometric Results

Lumens(lm): 1349.03
Efficiency(%): 89.04%
Lumens(lm)/Power(W): 76.65
Central intensity(cd): 3257.578
Maximum intensity(cd): 3257.578
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=32.2
 [C90/270]Total=32.2
Field angle(10%Imax): [C0/180]Total=69.6
 [C90/270]Total=69.6
Maximum s/h(1/2): C0_180=0.53 C90_270=0.53
Maximum s/h(1/4): C0_180=0.55 C90_270=0.55
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 89.05%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.378%

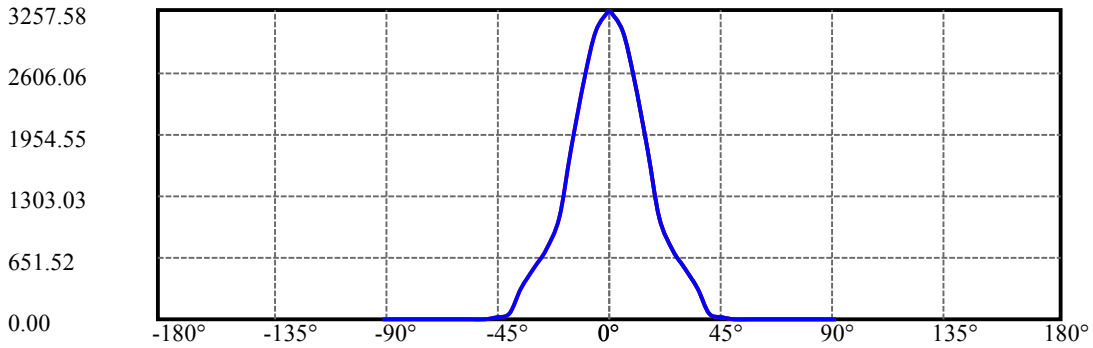
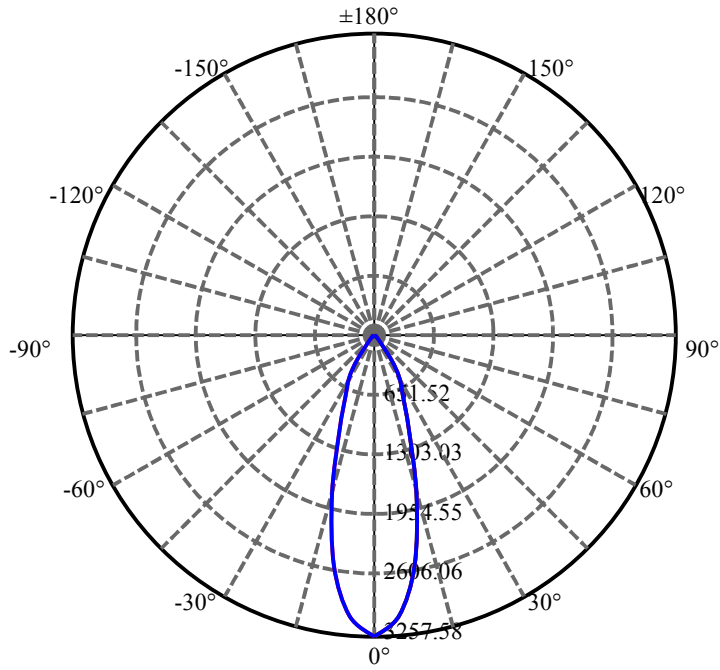
| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 0.0 | 3257.578 | 0.000 | 0 | .000% | .000% |
| 5.0 | 3033.977 | 75.214 | 75.214 | 4.965% | 5.575% |
| 10.0 | 2529.917 | 199.038 | 274.252 | 13.138% | 20.330% |
| 15.0 | 1787.281 | 256.093 | 530.345 | 16.904% | 39.313% |
| 20.0 | 1075.902 | 235.966 | 766.311 | 15.575% | 56.805% |
| 25.0 | 729.085 | 189.310 | 955.621 | 12.496% | 70.838% |
| 30.0 | 536.714 | 160.188 | 1115.809 | 10.573% | 82.712% |
| 35.0 | 317.028 | 125.720 | 1241.529 | 8.298% | 92.031% |
| 40.0 | 52.684 | 61.684 | 1303.212 | 4.072% | 96.604% |
| 45.0 | 16.256 | 12.765 | 1315.977 | .843% | 97.550% |
| 50.0 | 7.509 | 4.802 | 1320.779 | .317% | 97.906% |
| 55.0 | 6.989 | 3.152 | 1323.932 | .208% | 98.139% |
| 60.0 | 6.926 | 3.216 | 1327.148 | .212% | 98.378% |
| 65.0 | 6.877 | 3.355 | 1330.503 | .221% | 98.627% |
| 70.0 | 6.961 | 3.504 | 1334.007 | .231% | 98.886% |
| 75.0 | 8.923 | 4.152 | 1338.159 | .274% | 99.194% |
| 80.0 | 6.447 | 4.113 | 1342.271 | .271% | 99.499% |
| 85.0 | 6.180 | 3.431 | 1345.703 | .226% | 99.753% |
| 90.0 | 5.977 | 3.329 | 1349.031 | .220% | 100.000% |

ZONAL LUMEN SUMMARY

| Zone | Lumens | %Lamp | %Fixt |
|---------|---------|--------|---------|
| 0-30 | 1115.81 | 73.65% | 82.71% |
| 0-40 | 1303.21 | 86.02% | 96.60% |
| 0-60 | 1327.15 | 87.60% | 98.38% |
| 0-90 | 1345.70 | 88.83% | 99.75% |
| 0-120 | 1345.70 | 88.83% | 99.75% |
| 0-180 | 1349.03 | 89.04% | 100.00% |
| 60-90 | 21.77 | 1.44% | 1.61% |
| 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% |
| 0-28.86 | 1079.23 | 71.24% | 80.00% |

ZONAL LUMEN SUMMARY

| | |
|---------|--------|
| 0-10 | 274.25 |
| 10-20 | 492.06 |
| 20-30 | 349.50 |
| 30-40 | 187.40 |
| 40-50 | 17.57 |
| 50-60 | 6.37 |
| 60-70 | 6.86 |
| 70-80 | 8.26 |
| 80-90 | 3.43 |
| 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: —————

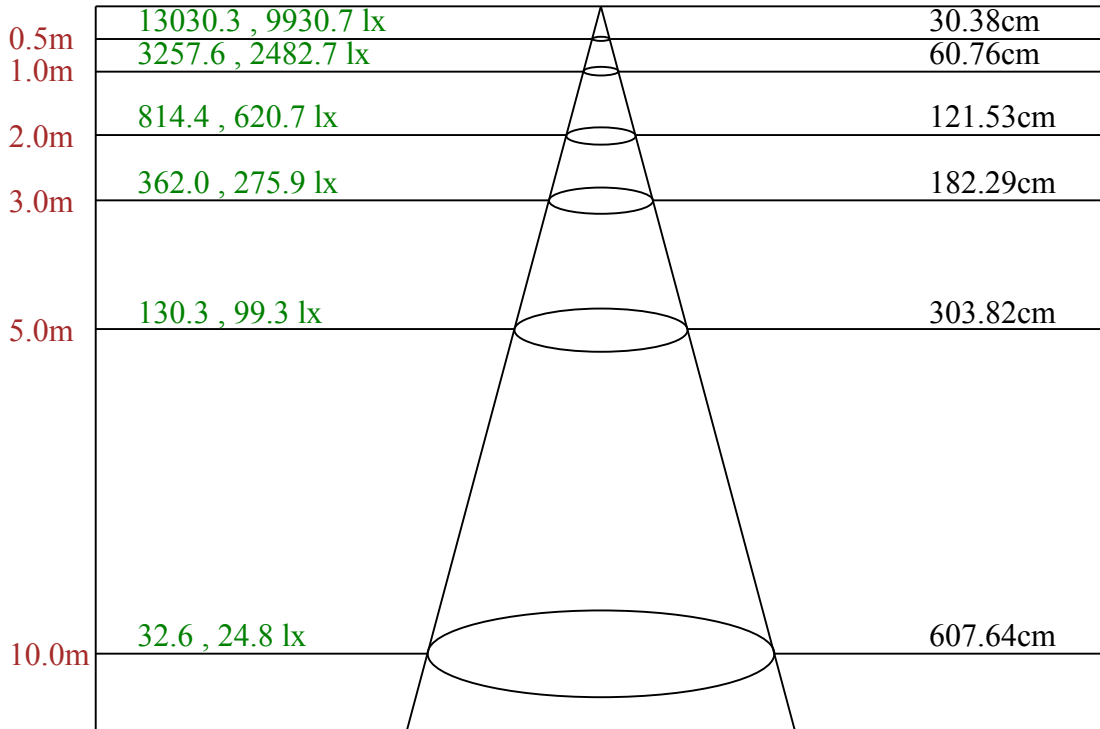
C90/C270: —————

Field angle(10%Imax):C0/180Left:34.8 Right:34.8

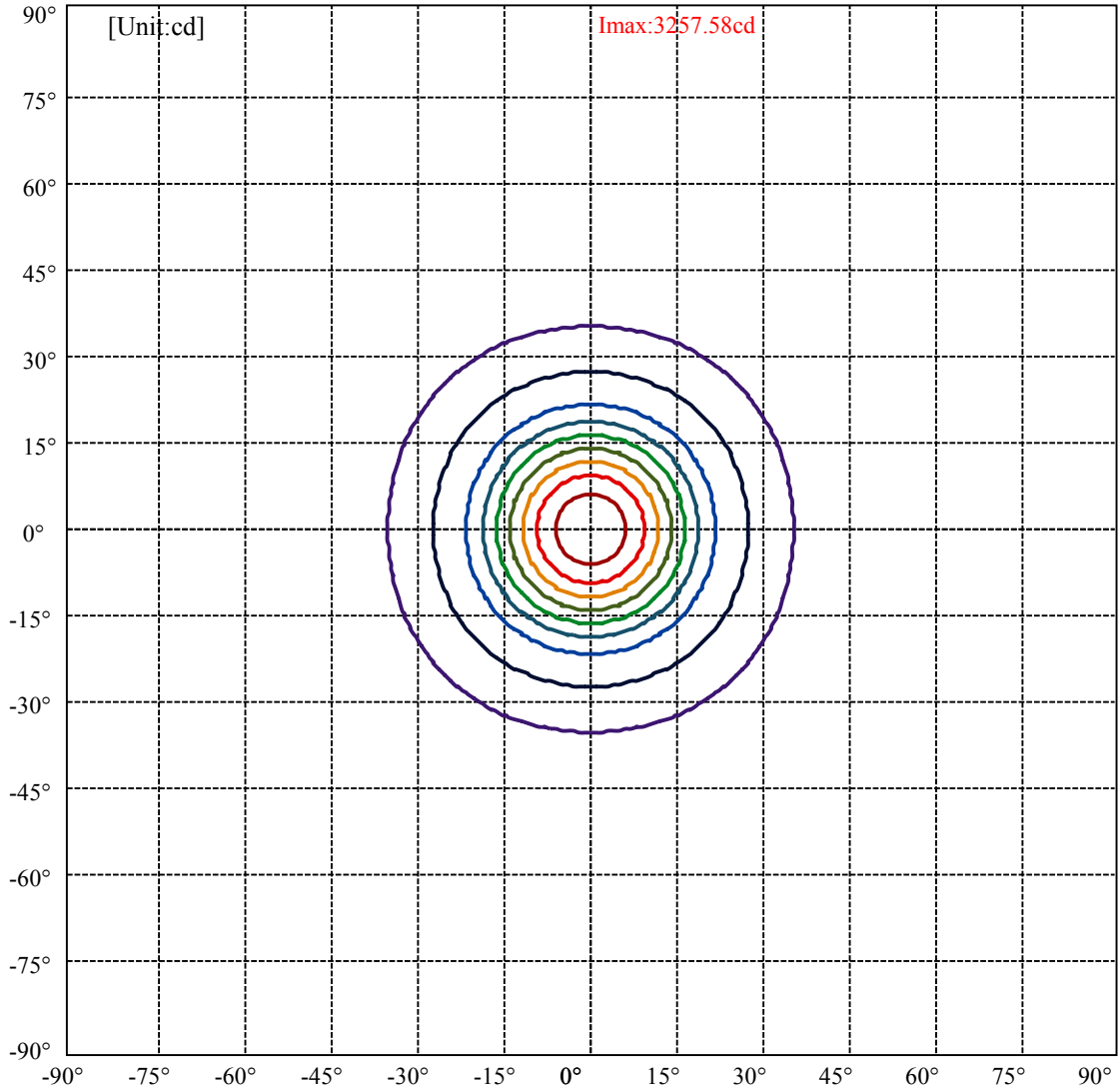
:C90/270Left:34.8 Right:34.8

Beam Angle(50%Imax):C0/180Left:16.1 Right:16.1

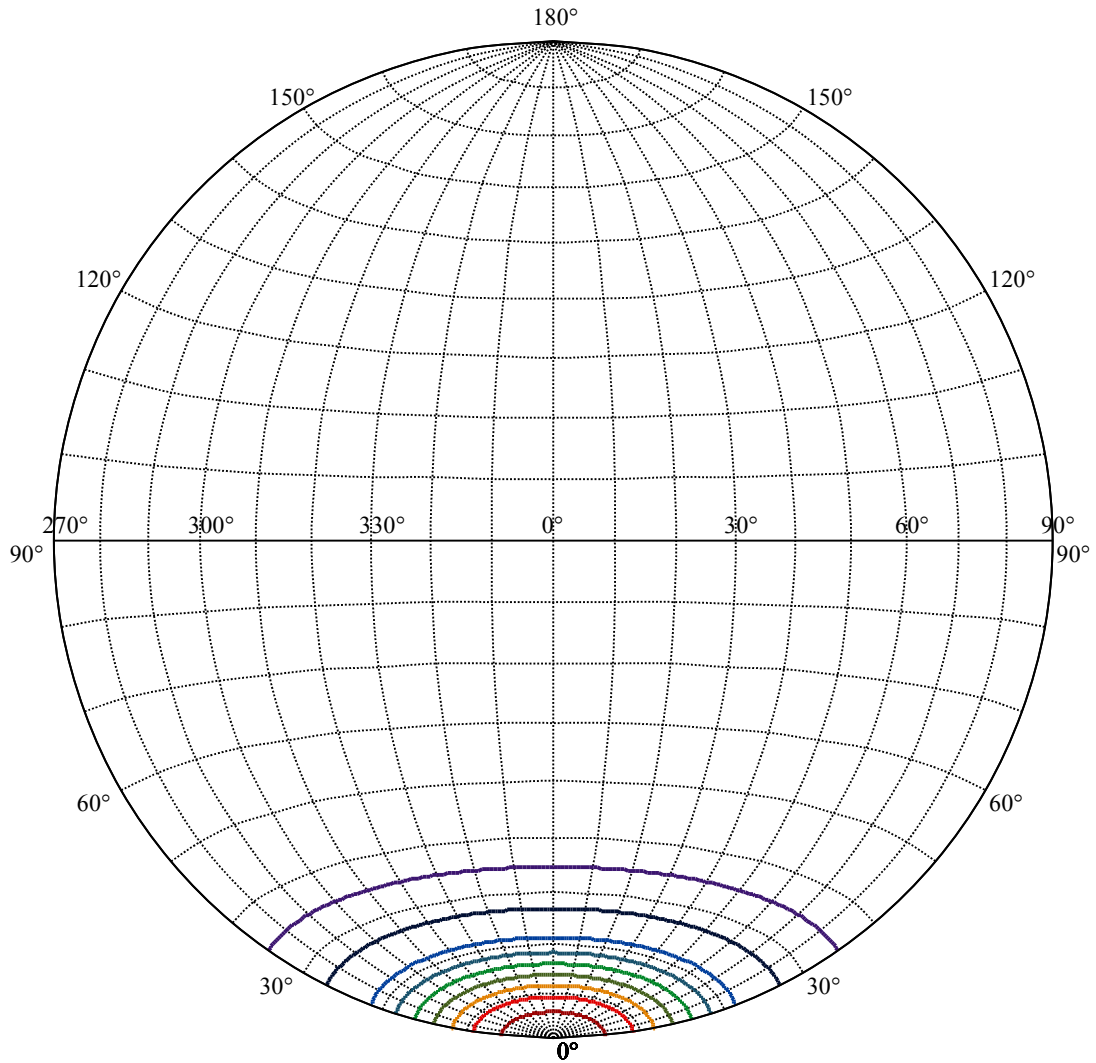
:C90/270Left:16.1 Right:16.1



Max , Ave Beam angle of C0 plane 33.80



| | |
|-------------------|---|
| (10%Imax) 325.758 | — |
| (20%Imax) 651.516 | — |
| (30%Imax) 977.273 | — |
| (40%Imax) 1303.03 | — |
| (50%Imax) 1628.79 | — |
| (60%Imax) 1954.55 | — |
| (70%Imax) 2280.3 | — |
| (80%Imax) 2606.06 | — |
| (90%Imax) 2931.82 | — |












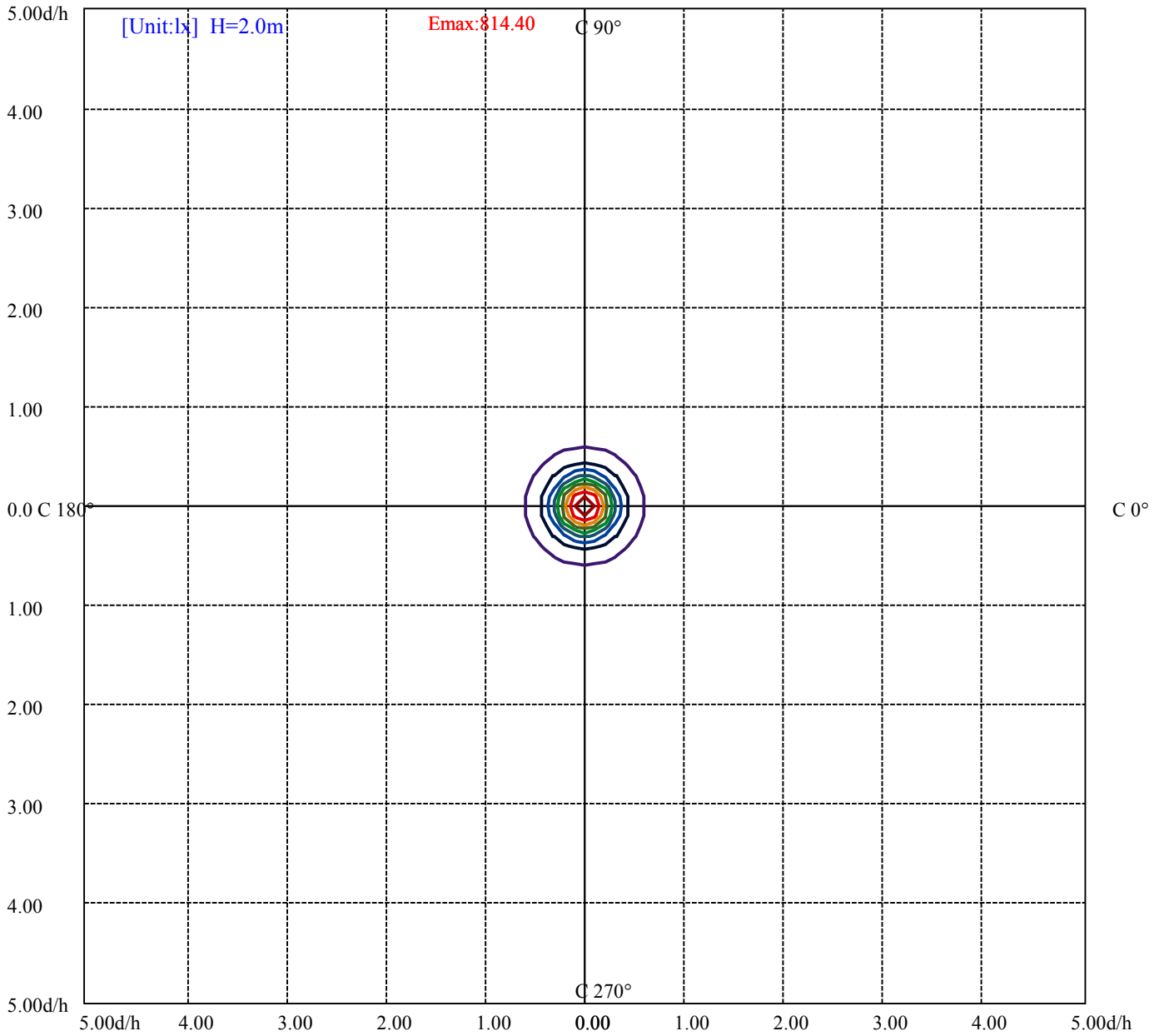
House

[Unit:cd]

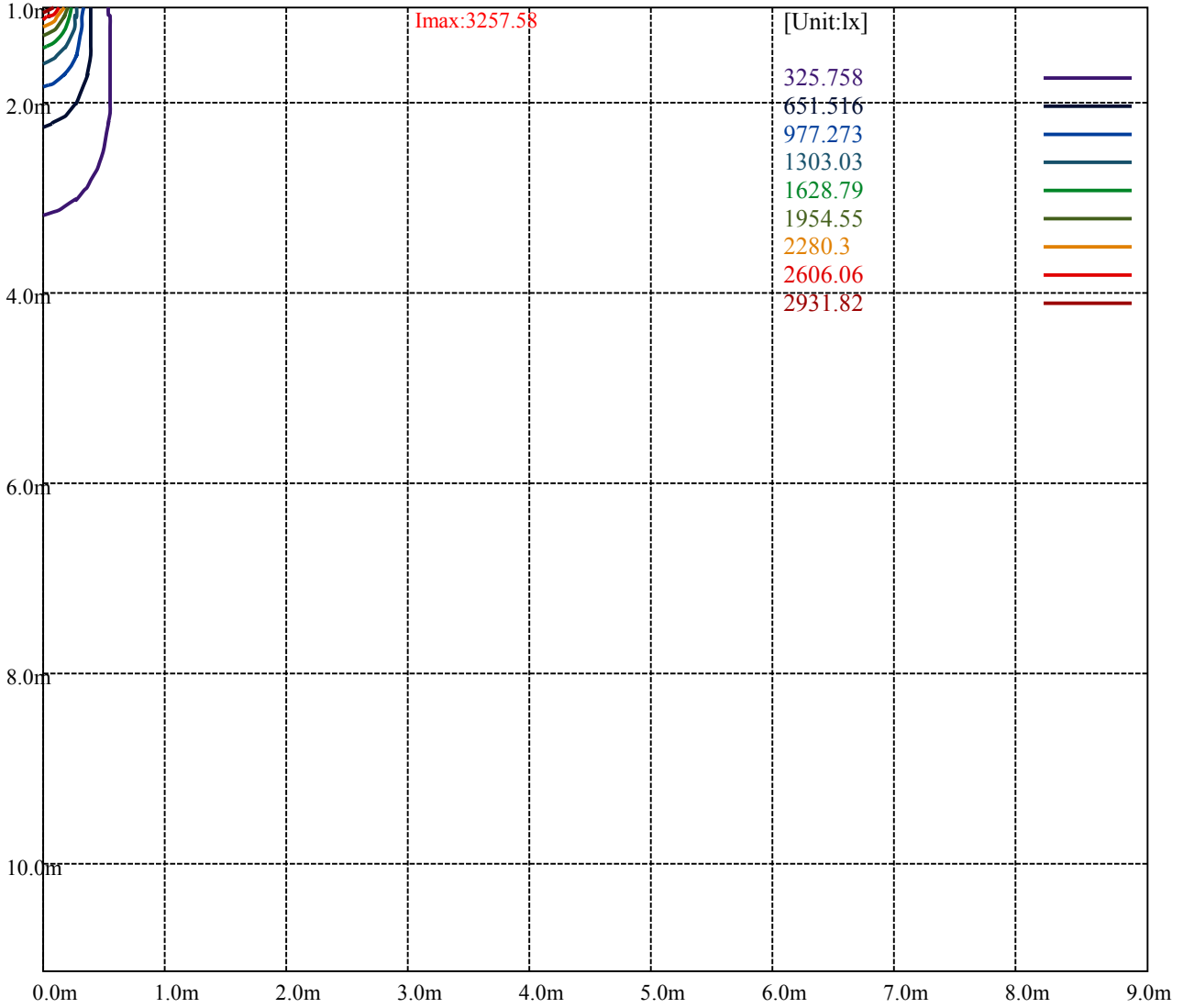
Road

Imax:3257.58

| | | |
|-----------|---------|---|
| (10%Imax) | 325.758 |  |
| (20%Imax) | 651.516 |  |
| (30%Imax) | 977.273 |  |
| (40%Imax) | 1303.03 |  |
| (50%Imax) | 1628.79 |  |
| (60%Imax) | 1954.55 |  |
| (70%Imax) | 2280.3 |  |
| (80%Imax) | 2606.06 |  |
| (90%Imax) | 2931.82 |  |



- (10%Emax) 81.43925
- (20%Emax) 162.8785
- (30%Emax) 244.3177
- (40%Emax) 325.7575
- (50%Emax) 407.1975
- (60%Emax) 488.635
- (70%Emax) 570.075
- (80%Emax) 651.515
- (90%Emax) 732.9525



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 |

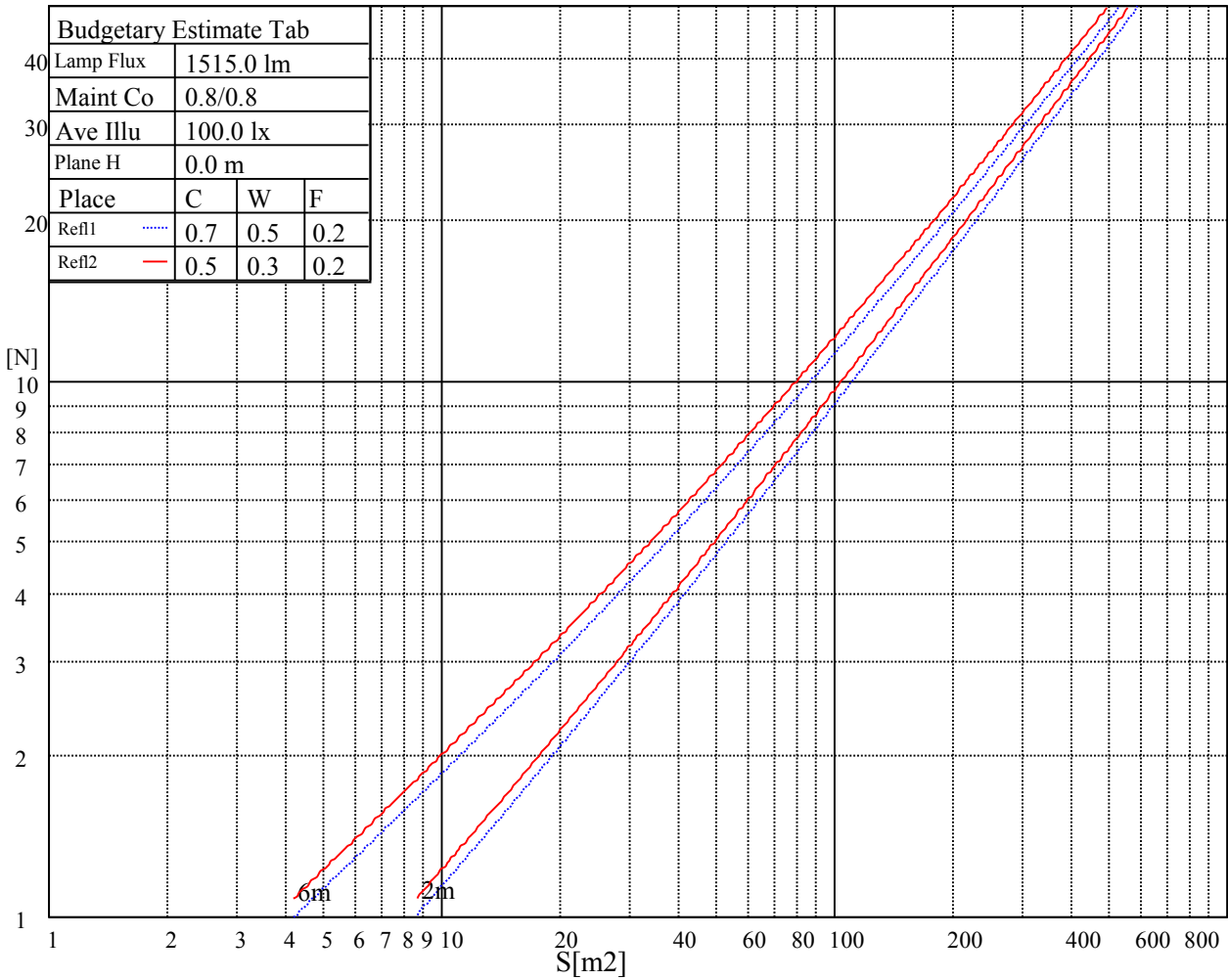
| L(Hor)(65) | L(Ver)(65) | L45(65) | L(Hor)(75) | L(Ver)(75) | L45(75) | L(Hor)(85) | L(Ver)(85) | L45(85) |
|------------|------------|---------|------------|------------|---------|------------|------------|---------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Glare Table

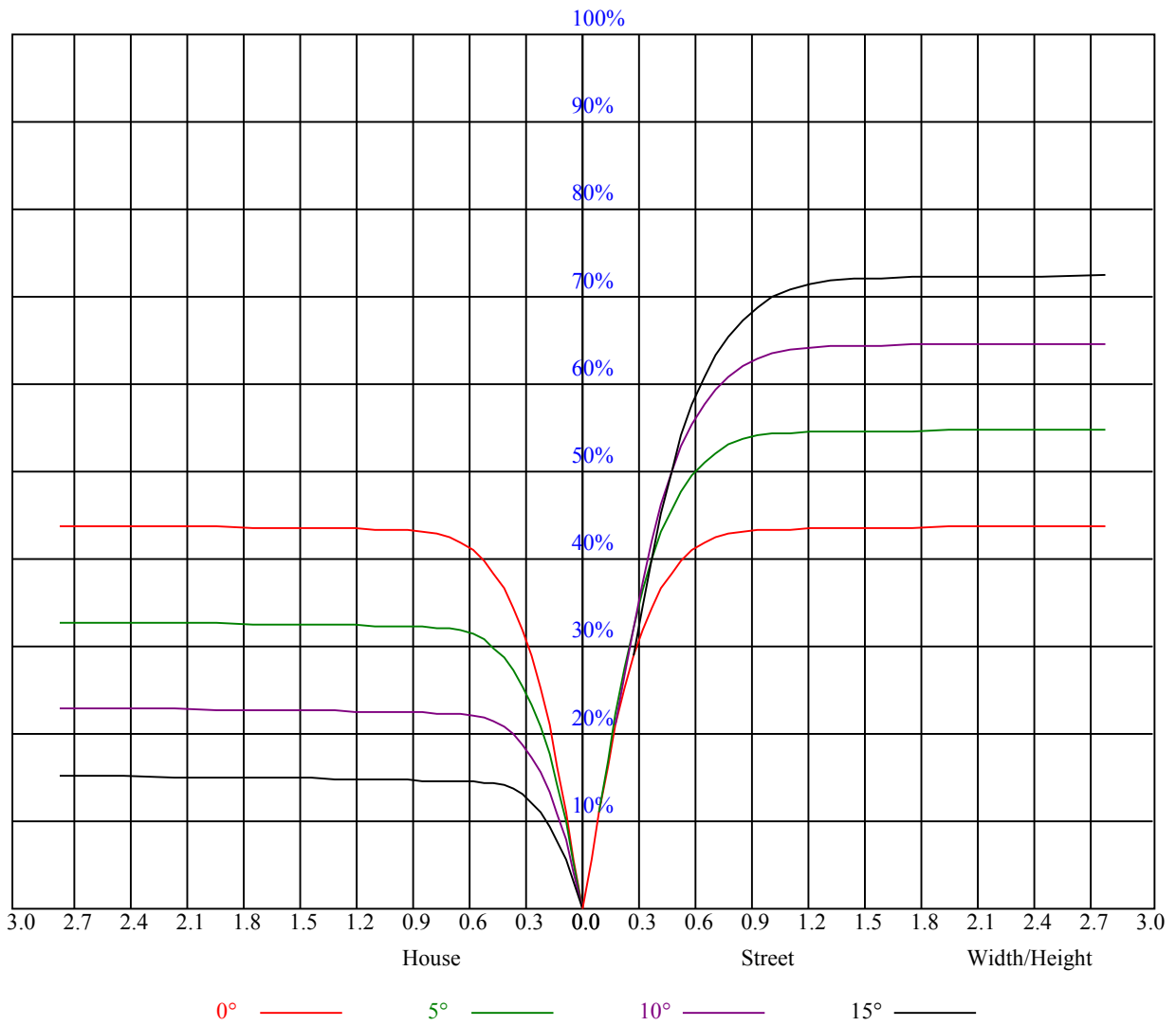
| Glare | Quality | Service Values Illuminance(lx) | | | | | | | |
|-------|---------|--------------------------------|------|------|-------|-------|-------|-------|-------|
| 1.15 | A | 2000 | 1000 | 500 | <=300 | | | | |
| 1.5 | B | | 2000 | 1000 | 500 | <=300 | | | |
| 1.85 | C | | | 2000 | 1000 | 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 | 0.99 | 0.97 | 0.95 | 0.97 | 0.95 | 0.94 | 0.94 | 0.92 | 0.91 | 0.90 | 0.89 | 0.88 | 0.87 | 0.86 | 0.86 | 0.84 |
| 2 | 0.93 | 0.90 | 0.87 | 0.92 | 0.89 | 0.86 | 0.89 | 0.86 | 0.84 | 0.86 | 0.84 | 0.83 | 0.84 | 0.82 | 0.81 | 0.79 |
| 3 | 0.88 | 0.84 | 0.81 | 0.87 | 0.83 | 0.80 | 0.84 | 0.81 | 0.79 | 0.82 | 0.80 | 0.78 | 0.80 | 0.78 | 0.77 | 0.75 |
| 4 | 0.83 | 0.79 | 0.76 | 0.82 | 0.78 | 0.75 | 0.80 | 0.77 | 0.74 | 0.79 | 0.76 | 0.73 | 0.77 | 0.75 | 0.73 | 0.71 |
| 5 | 0.79 | 0.75 | 0.71 | 0.78 | 0.74 | 0.71 | 0.77 | 0.73 | 0.70 | 0.75 | 0.72 | 0.70 | 0.74 | 0.71 | 0.69 | 0.68 |
| 6 | 0.75 | 0.71 | 0.67 | 0.75 | 0.70 | 0.67 | 0.73 | 0.70 | 0.67 | 0.72 | 0.69 | 0.66 | 0.71 | 0.68 | 0.66 | 0.65 |
| 7 | 0.72 | 0.67 | 0.64 | 0.71 | 0.67 | 0.64 | 0.70 | 0.66 | 0.63 | 0.69 | 0.66 | 0.63 | 0.68 | 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 | 0.66 | 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 | 0.64 | 0.61 | 0.58 | 0.64 | 0.60 | 0.58 | 0.63 | 0.60 | 0.57 | 0.56 |
| 10 | 0.63 | 0.59 | 0.56 | 0.63 | 0.58 | 0.55 | 0.62 | 0.58 | 0.55 | 0.61 | 0.58 | 0.55 | 0.61 | 0.57 | 0.55 | 0.54 |



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 | 3257.58 | 3036.93 | 2542.84 | 1835.97 | 1115.06 | 746.74 | 549.67 | 345.30 | 64.85 |
| 45.0 | 3257.58 | 3065.00 | 2557.07 | 1903.87 | 1120.58 | 750.06 | 562.54 | 345.19 | 64.70 |
| 90.0 | 3257.58 | 3021.15 | 2475.13 | 1746.16 | 1047.02 | 705.16 | 527.96 | 303.07 | 41.43 |
| 135.0 | 3257.58 | 3128.76 | 2654.55 | 1958.15 | 1181.86 | 762.78 | 546.21 | 355.52 | 77.18 |
| 180.0 | 3257.58 | 3045.35 | 2505.22 | 1720.31 | 1046.56 | 708.78 | 511.09 | 302.96 | 44.30 |
| 225.0 | 3257.58 | 2967.58 | 2497.38 | 1698.90 | 1012.92 | 711.77 | 519.64 | 278.12 | 37.33 |
| 270.0 | 3257.58 | 3050.99 | 2592.21 | 1818.21 | 1092.61 | 752.61 | 556.16 | 336.62 | 60.68 |
| 315.0 | 3257.58 | 2956.07 | 2414.92 | 1616.69 | 990.61 | 694.77 | 520.45 | 269.45 | 31.00 |
| 360.0 | 3257.58 | 3036.93 | 2542.84 | 1835.97 | 1115.06 | 746.74 | 549.67 | 345.30 | 64.85 |
| C/γ(°) | 45.0 | 50.0 | 55.0 | 60.0 | 65.0 | 70.0 | 75.0 | 80.0 | 85.0 |
| 0.0 | 22.46 | 7.58 | 6.91 | 6.85 | 6.79 | 6.96 | 9.77 | 7.07 | 6.18 |
| 45.0 | 17.74 | 7.71 | 7.10 | 7.04 | 6.93 | 6.93 | 10.59 | 6.48 | 6.25 |
| 90.0 | 17.39 | 7.60 | 6.98 | 6.81 | 6.81 | 6.87 | 6.64 | 6.42 | 6.19 |
| 135.0 | 16.09 | 7.59 | 7.14 | 7.20 | 7.09 | 7.20 | 12.04 | 6.41 | 6.30 |
| 180.0 | 12.97 | 7.19 | 6.85 | 6.91 | 6.91 | 6.96 | 7.52 | 6.34 | 6.12 |
| 225.0 | 13.80 | 7.38 | 6.93 | 6.76 | 6.76 | 6.64 | 6.81 | 6.25 | 6.14 |
| 270.0 | 16.16 | 7.66 | 7.15 | 7.09 | 6.92 | 7.09 | 11.03 | 6.30 | 6.14 |
| 315.0 | 13.44 | 7.37 | 6.86 | 6.75 | 6.81 | 7.03 | 6.98 | 6.30 | 6.13 |
| 360.0 | 22.46 | 7.58 | 6.91 | 6.85 | 6.79 | 6.96 | 9.77 | 7.07 | 6.18 |
| C/γ(°) | 90.0 | | | | | | | | |
| 0.0 | 5.95 | | | | | | | | |
| 45.0 | 6.03 | | | | | | | | |
| 90.0 | 5.97 | | | | | | | | |
| 135.0 | 5.96 | | | | | | | | |
| 180.0 | 5.95 | | | | | | | | |
| 225.0 | 6.03 | | | | | | | | |
| 270.0 | 5.97 | | | | | | | | |
| 315.0 | 5.96 | | | | | | | | |
| 360.0 | 5.95 | | | | | | | | |