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Nata

| | |
|-------------------------|---------------------|
| LumCAT: 1-0928-M | |
| Luminaire: 92.70.124.00 | |
| Report No: NATA0100 | Voltage(V): 35.4200 |
| Test No: GC2019091904 | Current(A): 0.2970 |
| LampCAT: CITIZEN CLU028 | Power (W): 10.5000 |
| Lamp flux(lm): 1003.6 | PF: 0.0000 |
| Number of Lamps: 1 | Ballast type: DC |
| Length(mm): 0 | Width(mm): 0 |
| Phm Type: C | Height(mm): 0 |

Photometric Results

Lumens(lm): 790.92
Efficiency(%): 78.81%
Lumens(lm)/Power(W): 75.33
Central intensity(cd): 2513.250
Maximum intensity(cd): 2513.250
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=33.9
 [C90/270]Total=33.9
Field angle(10%Imax): [C0/180]Total=49.4
 [C90/270]Total=49.4
Maximum s/h(1/2): C0_180=0.57 C90_270=0.57
Maximum s/h(1/4): C0_180=0.53 C90_270=0.53
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 78.81%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.570%

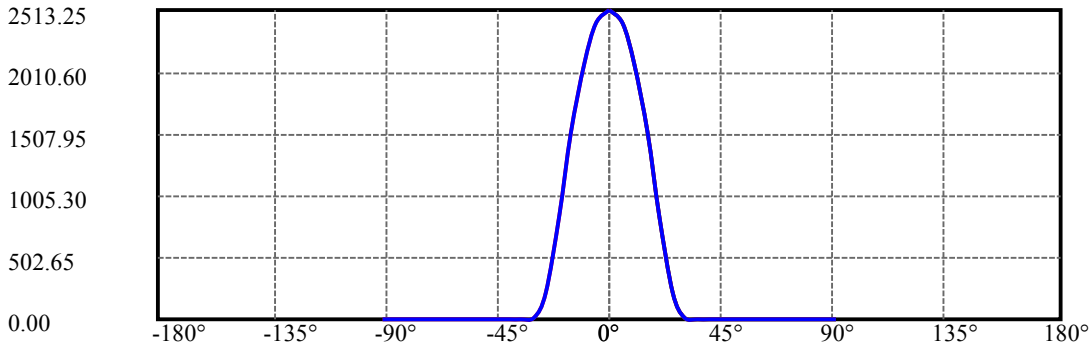
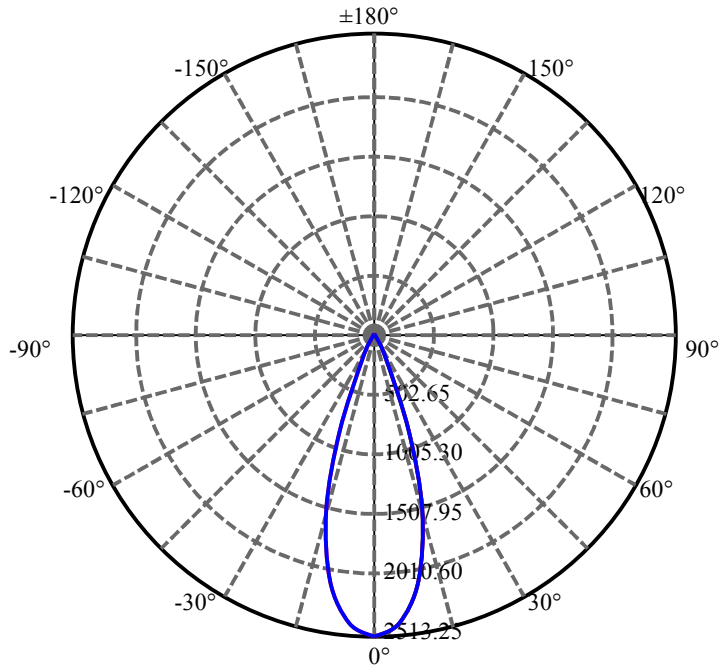
| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 0.0 | 2513.250 | 0.000 | 0 | .000% | .000% |
| 5.0 | 2402.648 | 58.768 | 58.768 | 5.856% | 7.430% |
| 10.0 | 2080.898 | 160.391 | 219.159 | 15.982% | 27.709% |
| 15.0 | 1515.635 | 213.344 | 432.503 | 21.258% | 54.683% |
| 20.0 | 848.482 | 194.836 | 627.339 | 19.414% | 79.317% |
| 25.0 | 211.535 | 111.176 | 738.515 | 11.078% | 93.374% |
| 30.0 | 17.930 | 29.039 | 767.554 | 2.894% | 97.045% |
| 35.0 | 6.230 | 3.558 | 771.112 | .354% | 97.495% |
| 40.0 | 4.774 | 1.836 | 772.948 | .183% | 97.727% |
| 45.0 | 4.170 | 1.656 | 774.604 | .165% | 97.937% |
| 50.0 | 3.902 | 1.631 | 776.235 | .163% | 98.143% |
| 55.0 | 3.748 | 1.663 | 777.898 | .166% | 98.353% |
| 60.0 | 3.677 | 1.716 | 779.615 | .171% | 98.570% |
| 65.0 | 3.621 | 1.774 | 781.389 | .177% | 98.795% |
| 70.0 | 3.614 | 1.832 | 783.221 | .183% | 99.026% |
| 75.0 | 3.593 | 1.884 | 785.105 | .188% | 99.264% |
| 80.0 | 3.586 | 1.921 | 787.026 | .191% | 99.507% |
| 85.0 | 3.572 | 1.945 | 788.971 | .194% | 99.753% |
| 90.0 | 3.558 | 1.952 | 790.923 | .195% | 100.000% |

ZONAL LUMEN SUMMARY

| Zone | Lumens | %Lamp | %Fixt |
|---------|--------|--------|---------|
| 0-30 | 767.55 | 76.48% | 97.05% |
| 0-40 | 772.95 | 77.02% | 97.73% |
| 0-60 | 779.61 | 77.68% | 98.57% |
| 0-90 | 788.97 | 78.62% | 99.75% |
| 0-120 | 788.97 | 78.62% | 99.75% |
| 0-180 | 790.92 | 78.81% | 100.00% |
| 60-90 | 11.07 | 1.10% | 1.40% |
| 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% |
| 0-20.24 | 632.74 | 63.05% | 80.00% |

ZONAL LUMEN SUMMARY

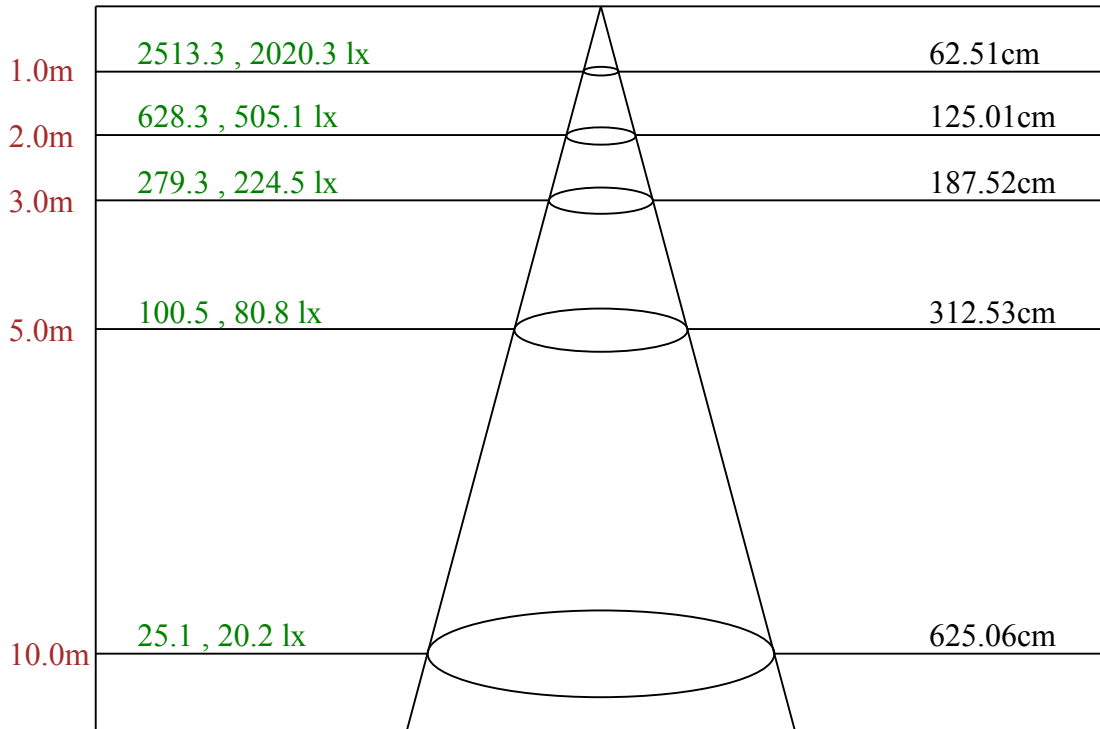
| | |
|---------|--------|
| 0-10 | 219.16 |
| 10-20 | 408.18 |
| 20-30 | 140.22 |
| 30-40 | 5.39 |
| 40-50 | 3.29 |
| 50-60 | 3.38 |
| 60-70 | 3.61 |
| 70-80 | 3.80 |
| 80-90 | 1.94 |
| 90-100 | 0.00 |
| 100-110 | 0.00 |
| 110-120 | 0.00 |
| 120-130 | 0.00 |
| 130-140 | 0.00 |
| 140-150 | 0.00 |
| 150-160 | 0.00 |
| 160-170 | 0.00 |
| 170-180 | 0.00 |



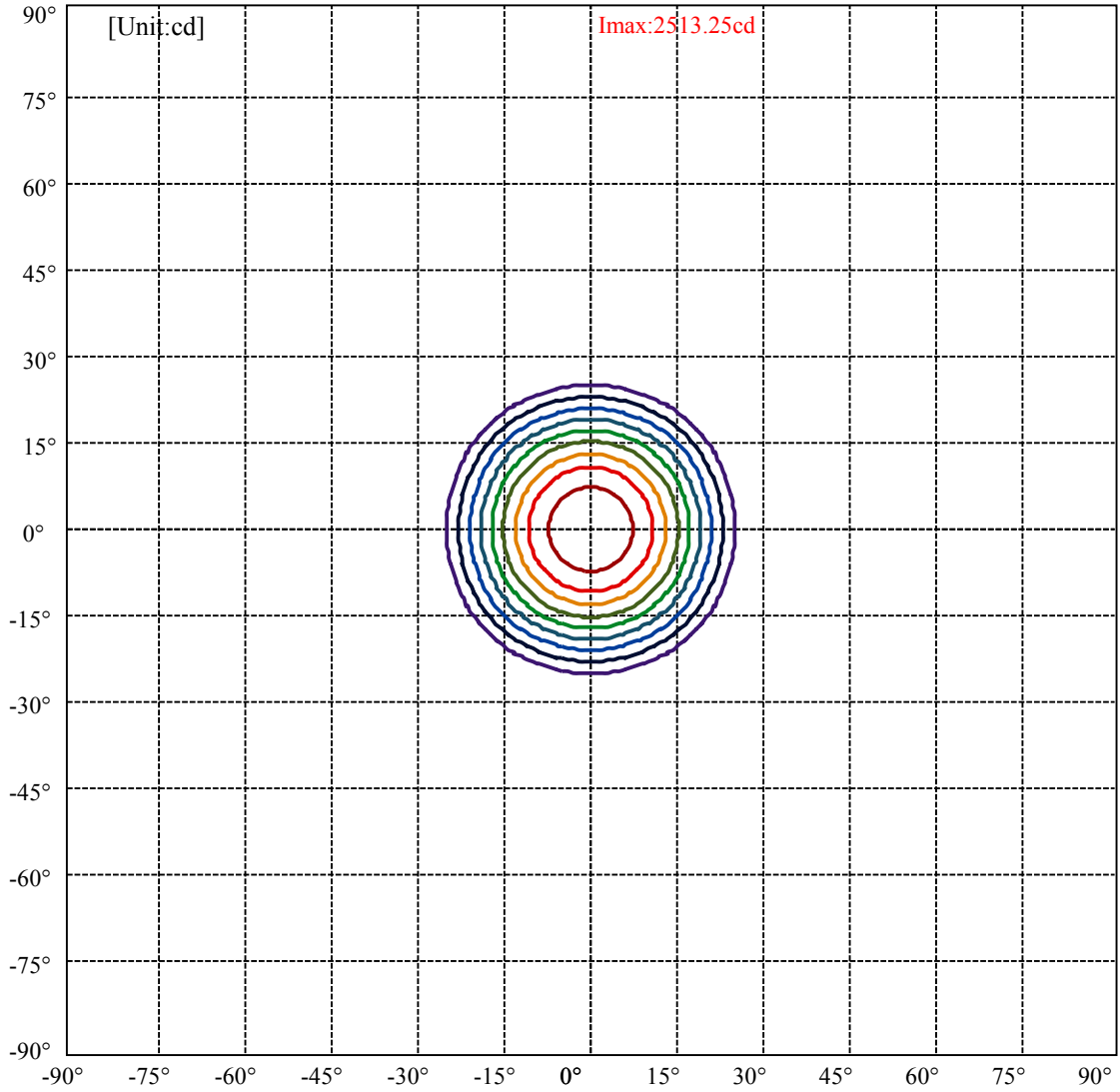
C0(Max): ———
C0/C180: ———
C90/C270: ———

Field angle(10%Imax):C0/180Left:24.7 Right:24.7
:C90/270Left:24.7 Right:24.7

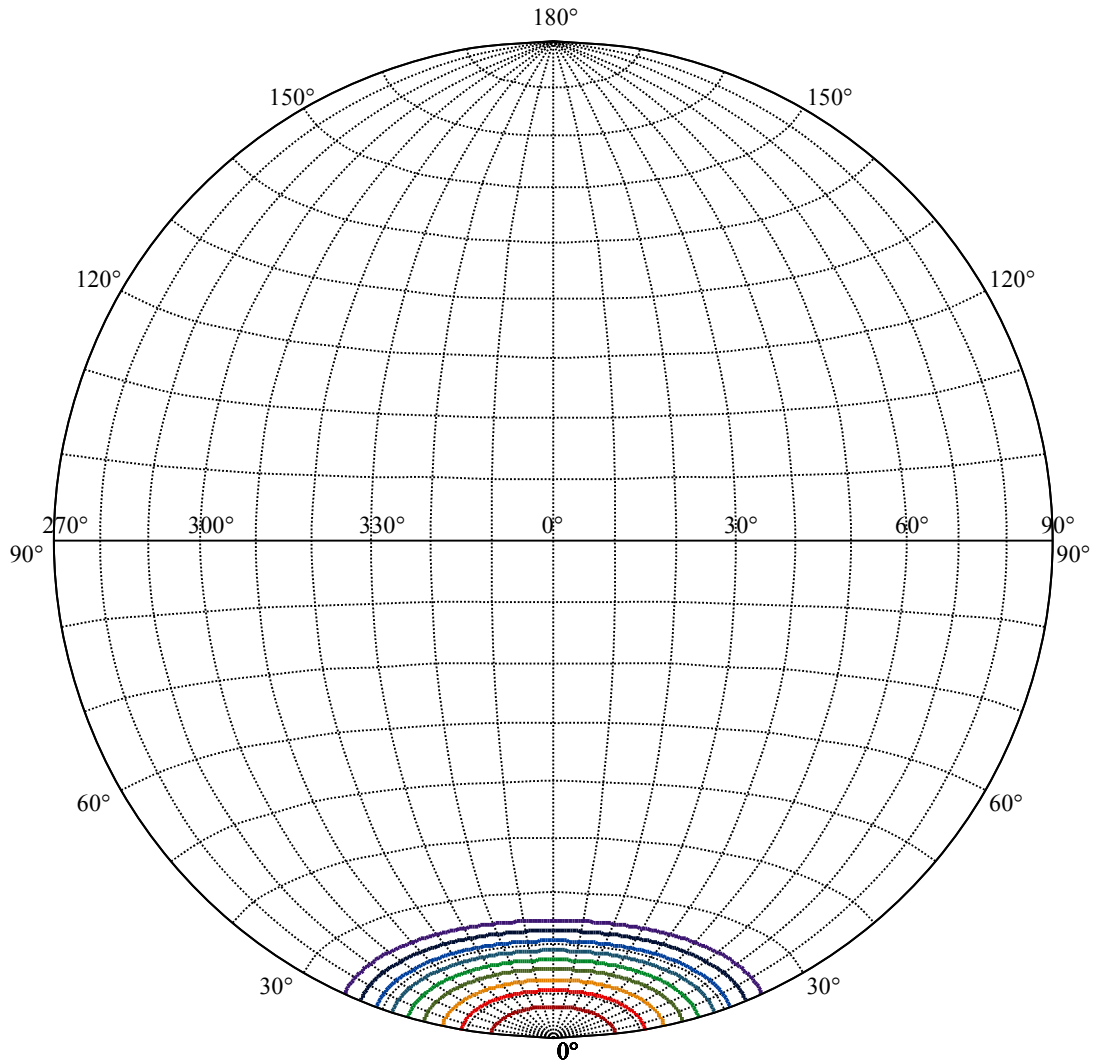
Beam Angle(50%Imax):C0/180Left:16.9 Right:16.9
:C90/270Left:16.9 Right:16.9



Max , Ave Beam angle of C0 plane 34.71



| | |
|-------------------|---|
| (10%Imax) 251.325 | — |
| (20%Imax) 502.65 | — |
| (30%Imax) 753.975 | — |
| (40%Imax) 1005.3 | — |
| (50%Imax) 1256.63 | — |
| (60%Imax) 1507.95 | — |
| (70%Imax) 1759.28 | — |
| (80%Imax) 2010.6 | — |
| (90%Imax) 2261.93 | — |



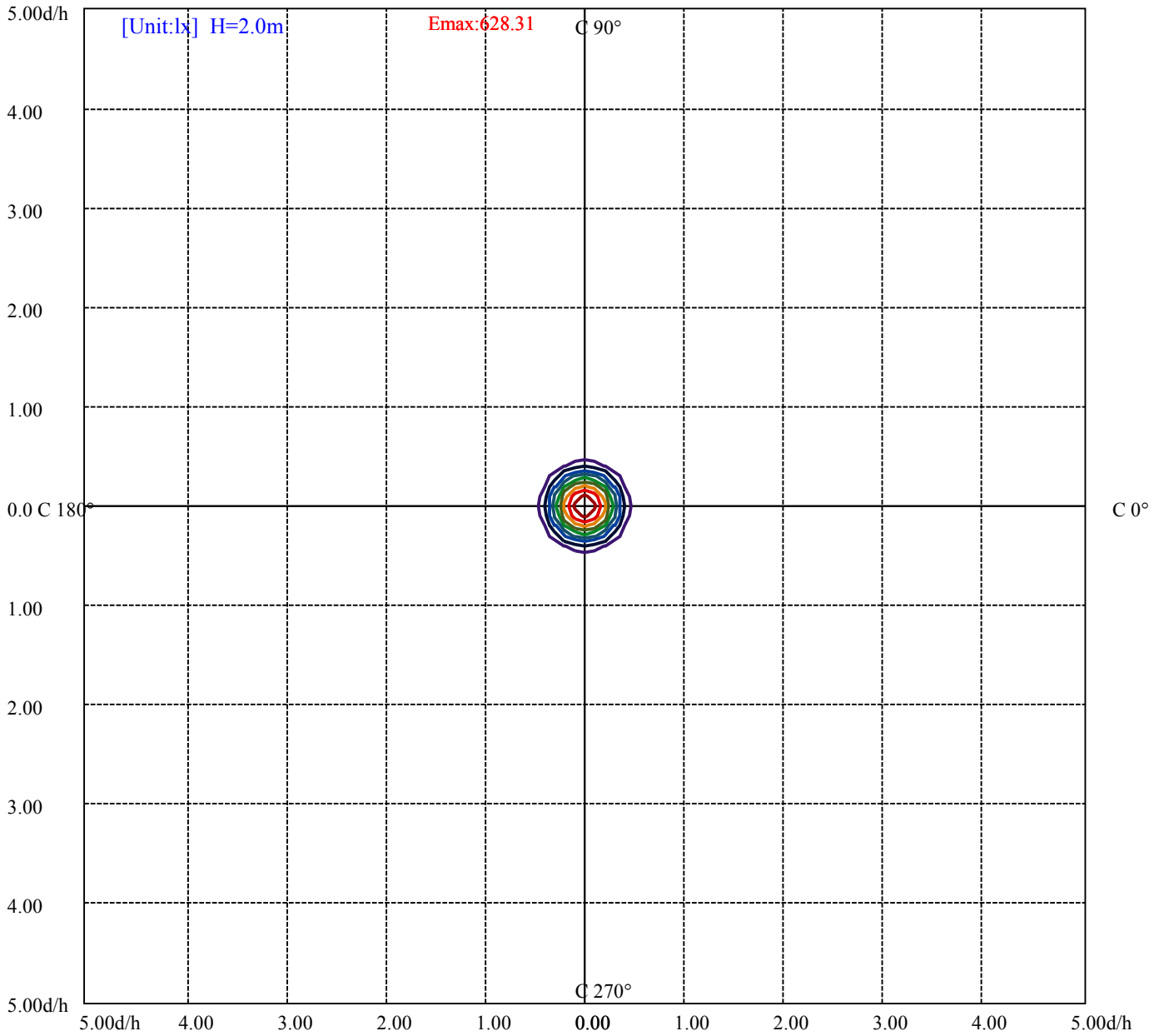
House

[Unit:cd]

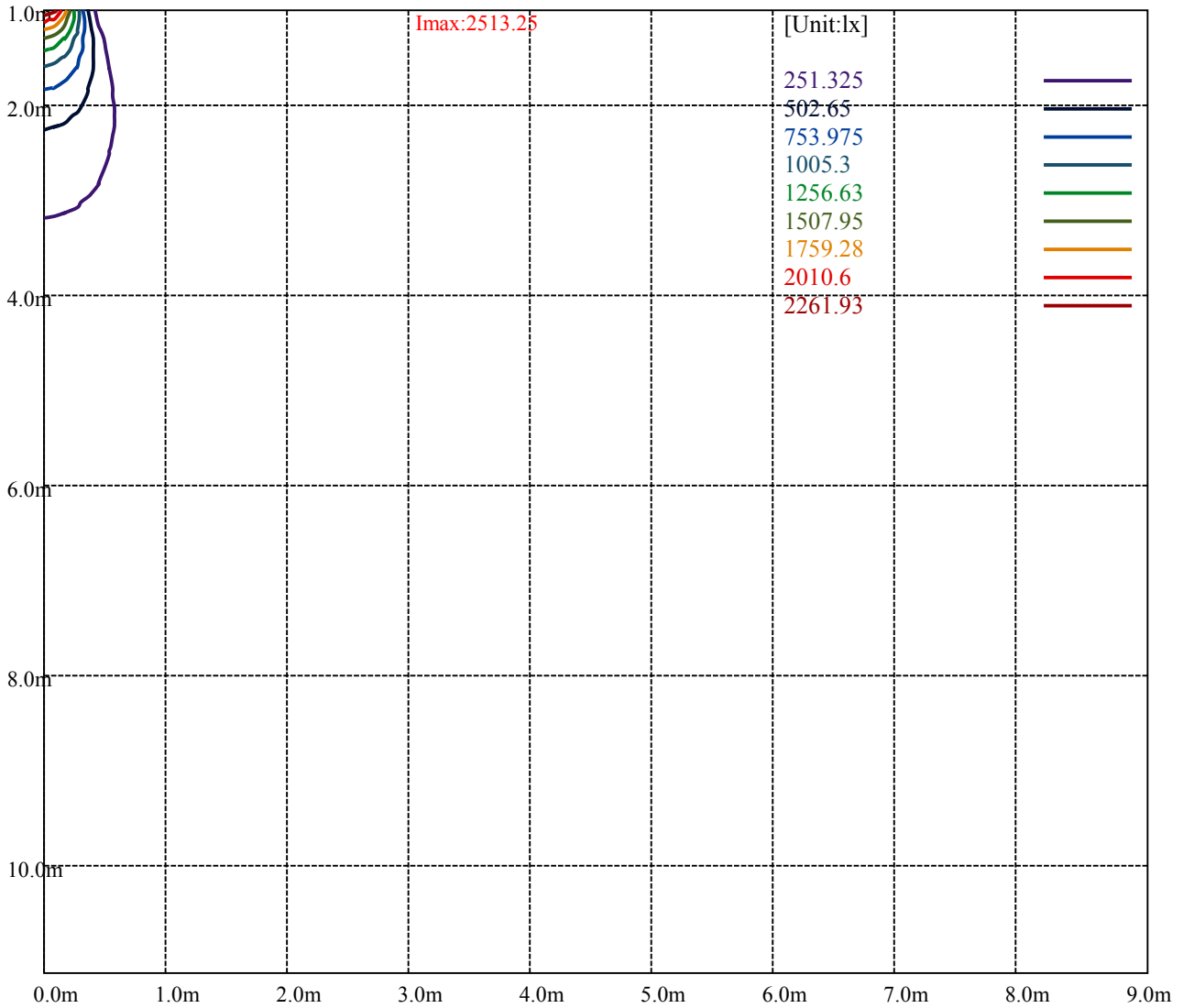
Road

Imax:2513.25

| | |
|-------------------|---|
| (10%Imax) 251.325 | — |
| (20%Imax) 502.65 | — |
| (30%Imax) 753.975 | — |
| (40%Imax) 1005.3 | — |
| (50%Imax) 1256.63 | — |
| (60%Imax) 1507.95 | — |
| (70%Imax) 1759.28 | — |
| (80%Imax) 2010.6 | — |
| (90%Imax) 2261.93 | — |



| | |
|--------------------|---|
| (10%Emax) 62.83125 | — |
| (20%Emax) 125.6622 | — |
| (30%Emax) 188.4935 | — |
| (40%Emax) 251.325 | — |
| (50%Emax) 314.155 | — |
| (60%Emax) 376.9875 | — |
| (70%Emax) 439.8175 | — |
| (80%Emax) 502.65 | — |
| (90%Emax) 565.48 | — |



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 |

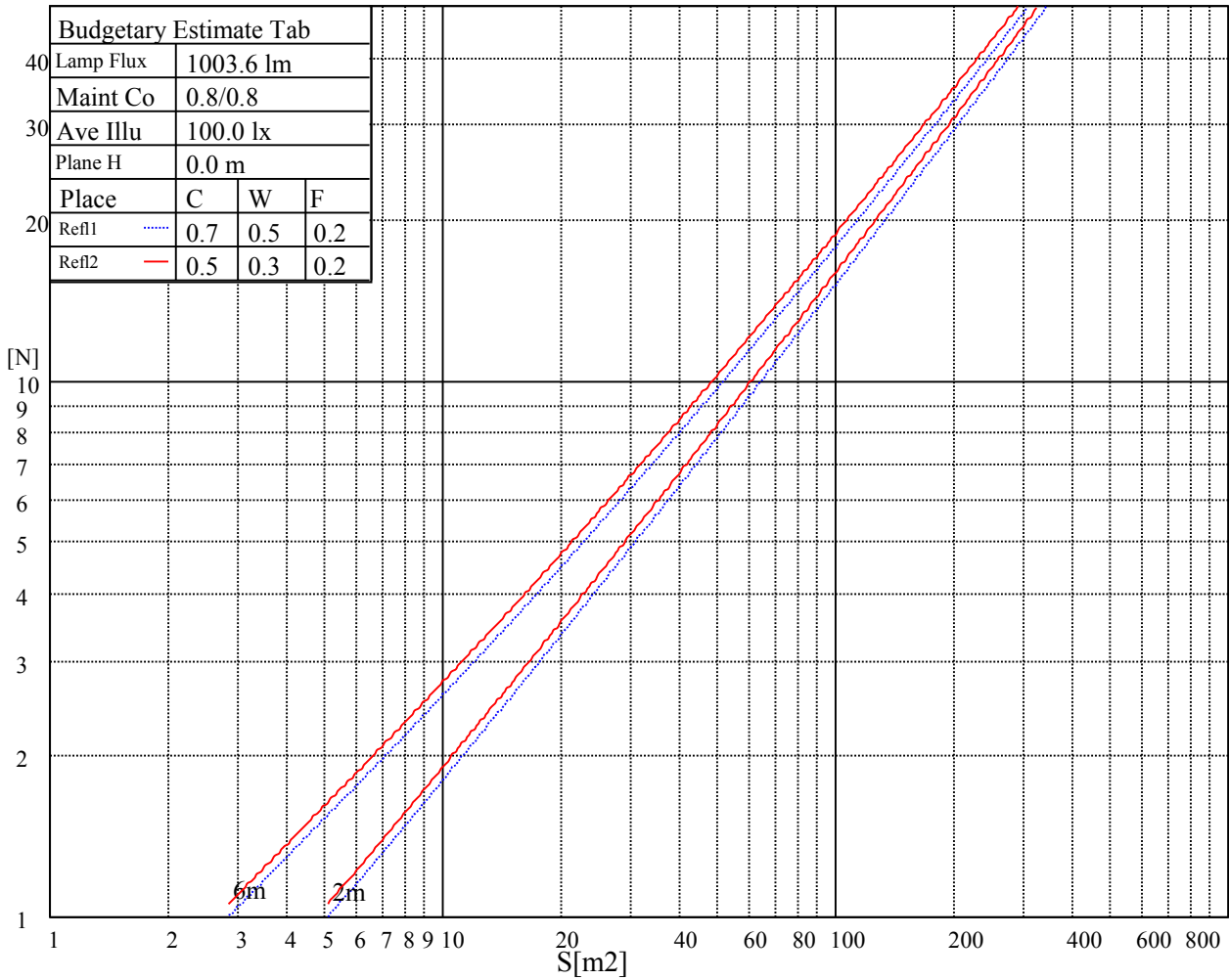
| L(Hor)(65) | L(Ver)(65) | L45(65) | L(Hor)(75) | L(Ver)(75) | L45(75) | L(Hor)(85) | L(Ver)(85) | L45(85) |
|------------|------------|---------|------------|------------|---------|------------|------------|---------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Glare Table

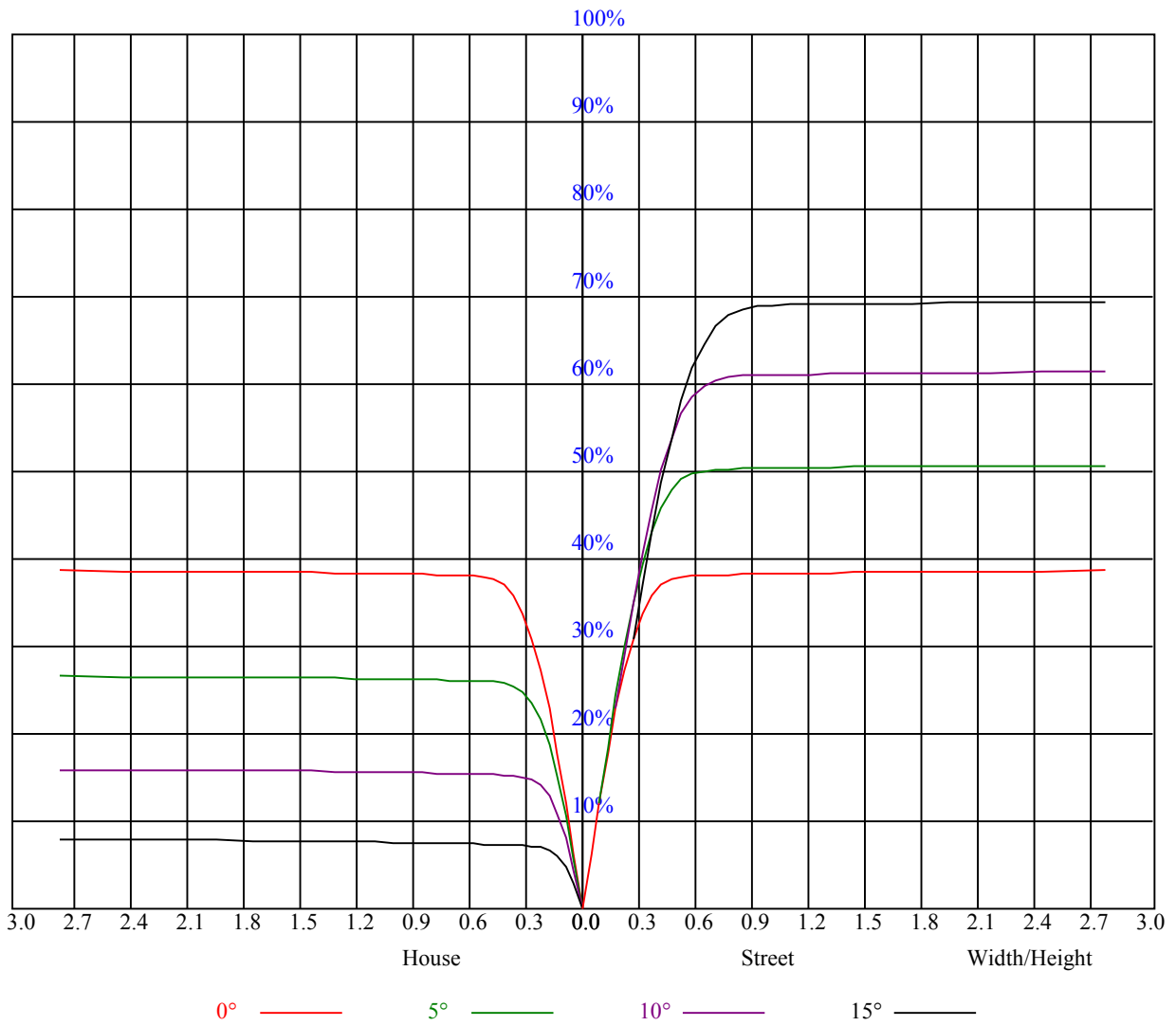
| Glare | Quality | Service Values Illuminance(lx) | | | | | | | |
|-------|---------|--------------------------------|------|------|-------|-------|-------|-------|-------|
| 1.15 | A | 2000 | 1000 | 500 | <=300 | | | | |
| 1.5 | B | | 2000 | 1000 | 500 | <=300 | | | |
| 1.85 | C | | | 2000 | 1000 | 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 | 0.94 | 0.94 | 0.94 | 0.92 | 0.92 | 0.92 | 0.88 | 0.88 | 0.88 | 0.84 | 0.84 | 0.84 | 0.80 | 0.80 | 0.80 | 0.79 |
| 1 | 0.89 | 0.87 | 0.85 | 0.87 | 0.85 | 0.84 | 0.84 | 0.83 | 0.81 | 0.81 | 0.80 | 0.79 | 0.78 | 0.77 | 0.77 | 0.75 |
| 2 | 0.84 | 0.82 | 0.79 | 0.83 | 0.81 | 0.79 | 0.80 | 0.79 | 0.77 | 0.78 | 0.77 | 0.75 | 0.76 | 0.75 | 0.74 | 0.73 |
| 3 | 0.80 | 0.77 | 0.75 | 0.79 | 0.77 | 0.74 | 0.77 | 0.75 | 0.73 | 0.76 | 0.74 | 0.72 | 0.74 | 0.72 | 0.71 | 0.70 |
| 4 | 0.77 | 0.74 | 0.71 | 0.76 | 0.73 | 0.71 | 0.75 | 0.72 | 0.70 | 0.73 | 0.71 | 0.69 | 0.72 | 0.70 | 0.69 | 0.68 |
| 5 | 0.74 | 0.71 | 0.68 | 0.73 | 0.70 | 0.68 | 0.72 | 0.69 | 0.67 | 0.71 | 0.69 | 0.67 | 0.70 | 0.68 | 0.66 | 0.65 |
| 6 | 0.71 | 0.68 | 0.65 | 0.71 | 0.68 | 0.65 | 0.70 | 0.67 | 0.65 | 0.69 | 0.66 | 0.64 | 0.68 | 0.66 | 0.64 | 0.63 |
| 7 | 0.69 | 0.65 | 0.63 | 0.68 | 0.65 | 0.63 | 0.68 | 0.65 | 0.63 | 0.67 | 0.64 | 0.62 | 0.66 | 0.64 | 0.62 | 0.61 |
| 8 | 0.67 | 0.63 | 0.61 | 0.66 | 0.63 | 0.61 | 0.66 | 0.63 | 0.61 | 0.65 | 0.62 | 0.60 | 0.64 | 0.62 | 0.60 | 0.59 |
| 9 | 0.65 | 0.61 | 0.59 | 0.64 | 0.61 | 0.59 | 0.64 | 0.61 | 0.59 | 0.63 | 0.60 | 0.59 | 0.62 | 0.60 | 0.58 | 0.58 |
| 10 | 0.63 | 0.59 | 0.57 | 0.62 | 0.59 | 0.57 | 0.62 | 0.59 | 0.57 | 0.61 | 0.59 | 0.57 | 0.61 | 0.58 | 0.57 | 0.56 |



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 | 2499.19 | 2517.19 | 2326.50 | 1913.63 | 1259.44 | 464.06 | 46.07 | 7.88 | 5.34 |
| 45.0 | 2520.56 | 2496.94 | 2247.75 | 1779.75 | 1125.00 | 365.63 | 24.98 | 6.86 | 5.06 |
| 90.0 | 2515.50 | 2381.63 | 2022.19 | 1473.19 | 738.79 | 108.79 | 9.73 | 5.74 | 4.56 |
| 135.0 | 2517.75 | 2364.19 | 1978.31 | 1436.63 | 660.38 | 75.49 | 10.52 | 5.51 | 4.50 |
| 180.0 | 2499.19 | 2254.50 | 1840.50 | 1092.43 | 429.19 | 37.97 | 7.71 | 5.18 | 4.44 |
| 225.0 | 2520.56 | 2316.94 | 1890.00 | 1108.46 | 560.42 | 55.80 | 9.23 | 5.51 | 4.50 |
| 270.0 | 2515.50 | 2431.13 | 2146.50 | 1621.69 | 964.13 | 307.13 | 15.81 | 6.53 | 4.84 |
| 315.0 | 2517.75 | 2458.69 | 2195.44 | 1699.31 | 1050.53 | 277.43 | 19.41 | 6.64 | 4.95 |
| 360.0 | 2499.19 | 2517.19 | 2326.50 | 1913.63 | 1259.44 | 464.06 | 46.07 | 7.88 | 5.34 |
| C/ γ (°) | 45.0 | 50.0 | 55.0 | 60.0 | 65.0 | 70.0 | 75.0 | 80.0 | 85.0 |
| 0.0 | 4.44 | 4.05 | 3.83 | 3.77 | 3.66 | 3.66 | 3.66 | 3.66 | 3.66 |
| 45.0 | 4.33 | 3.99 | 3.83 | 3.71 | 3.66 | 3.66 | 3.60 | 3.54 | 3.54 |
| 90.0 | 4.05 | 3.83 | 3.71 | 3.60 | 3.60 | 3.60 | 3.60 | 3.54 | 3.54 |
| 135.0 | 4.05 | 3.83 | 3.71 | 3.66 | 3.60 | 3.60 | 3.60 | 3.60 | 3.54 |
| 180.0 | 4.05 | 3.88 | 3.77 | 3.71 | 3.66 | 3.66 | 3.60 | 3.66 | 3.60 |
| 225.0 | 4.05 | 3.88 | 3.71 | 3.66 | 3.60 | 3.60 | 3.60 | 3.60 | 3.60 |
| 270.0 | 4.16 | 3.88 | 3.71 | 3.66 | 3.60 | 3.54 | 3.54 | 3.54 | 3.54 |
| 315.0 | 4.22 | 3.88 | 3.71 | 3.66 | 3.60 | 3.60 | 3.54 | 3.54 | 3.54 |
| 360.0 | 4.44 | 4.05 | 3.83 | 3.77 | 3.66 | 3.66 | 3.66 | 3.66 | 3.66 |
| C/ γ (°) | 90.0 | | | | | | | | |
| 0.0 | 3.60 | | | | | | | | |
| 45.0 | 3.54 | | | | | | | | |
| 90.0 | 3.49 | | | | | | | | |
| 135.0 | 3.54 | | | | | | | | |
| 180.0 | 3.60 | | | | | | | | |
| 225.0 | 3.60 | | | | | | | | |
| 270.0 | 3.54 | | | | | | | | |
| 315.0 | 3.54 | | | | | | | | |
| 360.0 | 3.60 | | | | | | | | |