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Nata

Client:

LumCAT: 1656-S

Luminaire: 92.70.127.00

Report No: NT2018040607

Test No: nata-0100

LampCAT: CREE CXA1512

Lamp flux(lm): 1295.7

Number of Lamps: 1

Length(mm): 47

Phm Type: C

Voltage(V): 35.6000

Current(A): 0.3500

Power (W): 12.4600

PF: 0.0000

Ballast type: DC

Width(mm): 47

Height(mm): 0

Photometric Results

Lumens(lm): 1211.49, Efficiency(%): 93.50% , Luminous Efficacy(lm/W): 97.23

Central intensity(cd): 8814.942, Maximum intensity(cd): 8814.942

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=15.4

[C90/270]Total=15.4

Field angle(10%Imax): [C0/180]Total=34.4

[C90/270]Total=34.4

Maximum s/h(1/2): C0_180=0.26 C90_270=0.26

Maximum s/h(1/4): C0_180=0.28 C90_270=0.28

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 97.48%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 94.769%

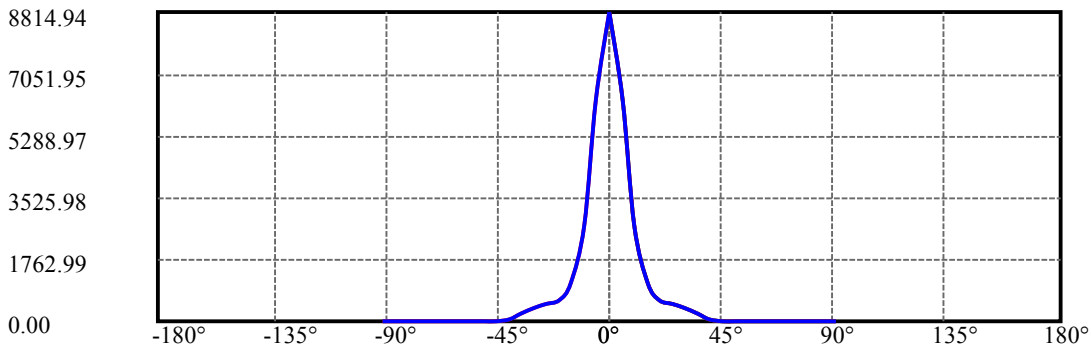
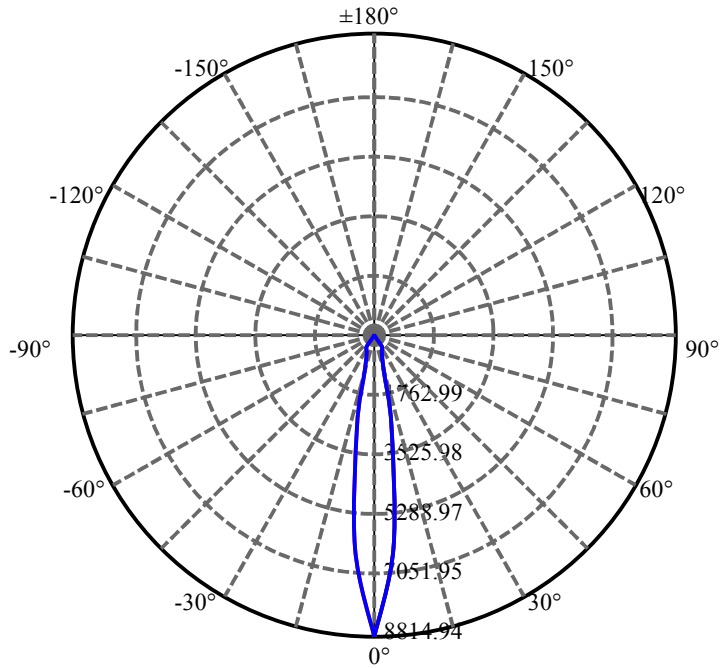
| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 0.0 | 8814.943 | 52.715 | 52.715 | 4.068% | 4.351% |
| 5.0 | 6284.069 | 300.211 | 352.926 | 23.170% | 29.132% |
| 10.0 | 2761.285 | 262.828 | 615.753 | 20.285% | 50.826% |
| 15.0 | 1094.824 | 155.321 | 771.074 | 11.987% | 63.647% |
| 20.0 | 607.375 | 113.867 | 884.942 | 8.788% | 73.046% |
| 25.0 | 465.598 | 107.857 | 992.799 | 8.324% | 81.949% |
| 30.0 | 408.711 | 112.015 | 1104.814 | 8.645% | 91.195% |
| 35.0 | 230.893 | 72.592 | 1177.406 | 5.603% | 97.187% |
| 40.0 | 28.691 | 10.109 | 1187.515 | .780% | 98.021% |
| 45.0 | 6.270 | 2.430 | 1189.945 | .188% | 98.222% |
| 50.0 | 5.437 | 2.283 | 1192.228 | .176% | 98.410% |
| 55.0 | 5.196 | 2.333 | 1194.561 | .180% | 98.603% |
| 60.0 | 5.100 | 2.421 | 1196.982 | .187% | 98.803% |
| 65.0 | 5.031 | 2.499 | 1199.481 | .193% | 99.009% |
| 70.0 | 4.996 | 2.574 | 1202.054 | .199% | 99.221% |
| 75.0 | 4.969 | 2.631 | 1204.685 | .203% | 99.439% |
| 80.0 | 4.962 | 2.679 | 1207.364 | .207% | 99.660% |
| 85.0 | 5.093 | 2.781 | 1210.145 | .215% | 99.889% |
| 90.0 | 4.900 | 1.343 | 1211.488 | .104% | 100.000% |

ZONAL LUMEN SUMMARY

| Zone | Lumens | %Lamp | %Fixt |
|---------|---------|--------|---------|
| 0-30 | 1104.81 | 85.27% | 91.19% |
| 0-40 | 1187.51 | 91.65% | 98.02% |
| 0-60 | 1196.98 | 92.38% | 98.80% |
| 0-90 | 1210.14 | 93.40% | 99.89% |
| 0-120 | 1210.14 | 93.40% | 99.89% |
| 0-180 | 1211.49 | 93.50% | 100.00% |
| 60-90 | 15.58 | 1.20% | 1.29% |
| 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% |
| 0-23.91 | 969.19 | 74.80% | 80.00% |

ZONAL LUMEN SUMMARY

| | |
|---------|--------|
| 0-10 | 615.75 |
| 10-20 | 269.19 |
| 20-30 | 219.87 |
| 30-40 | 82.70 |
| 40-50 | 4.71 |
| 50-60 | 4.75 |
| 60-70 | 5.07 |
| 70-80 | 5.31 |
| 80-90 | 2.78 |
| 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 |



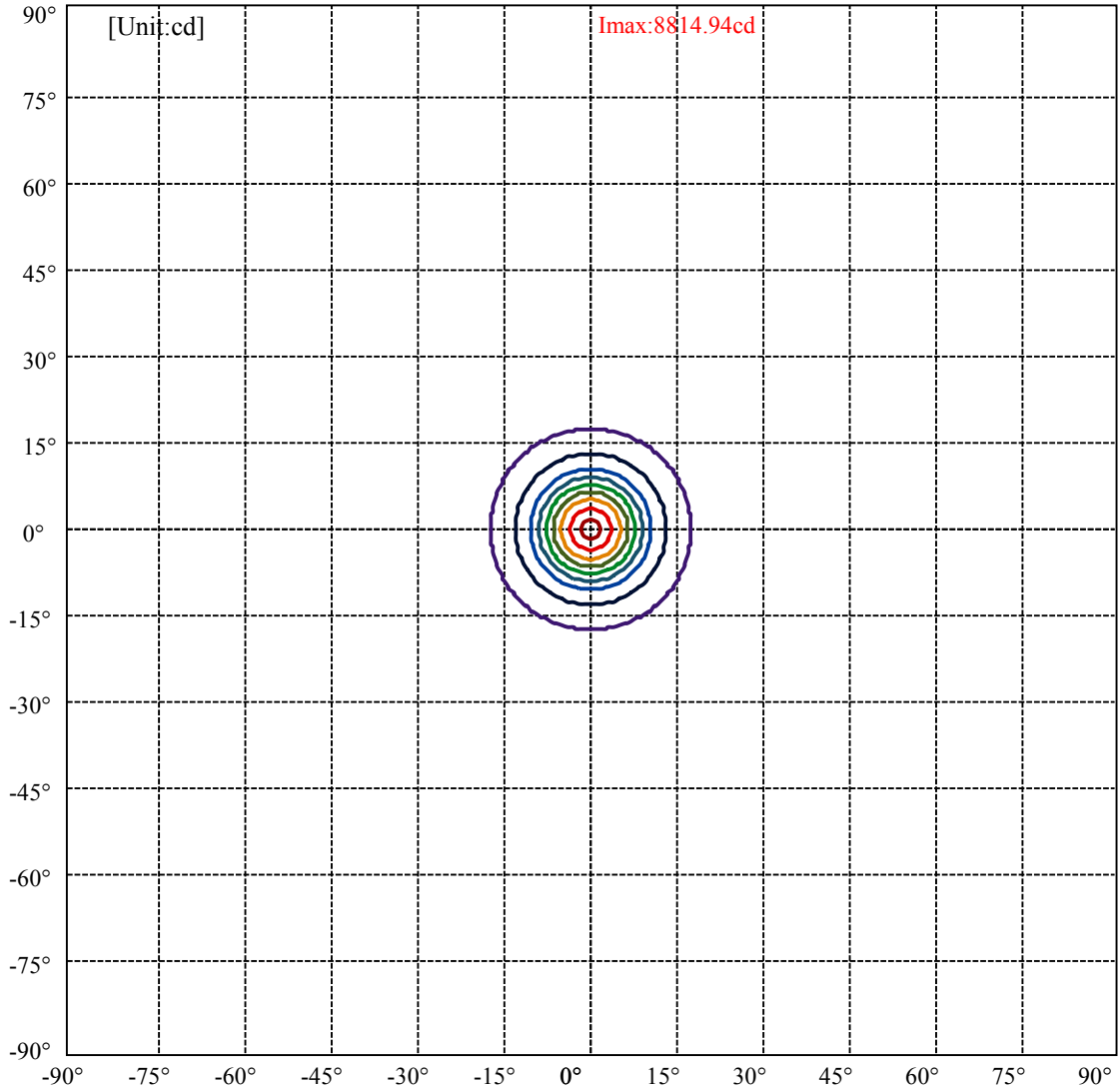
C0(Max): —————

C0/C180: —————

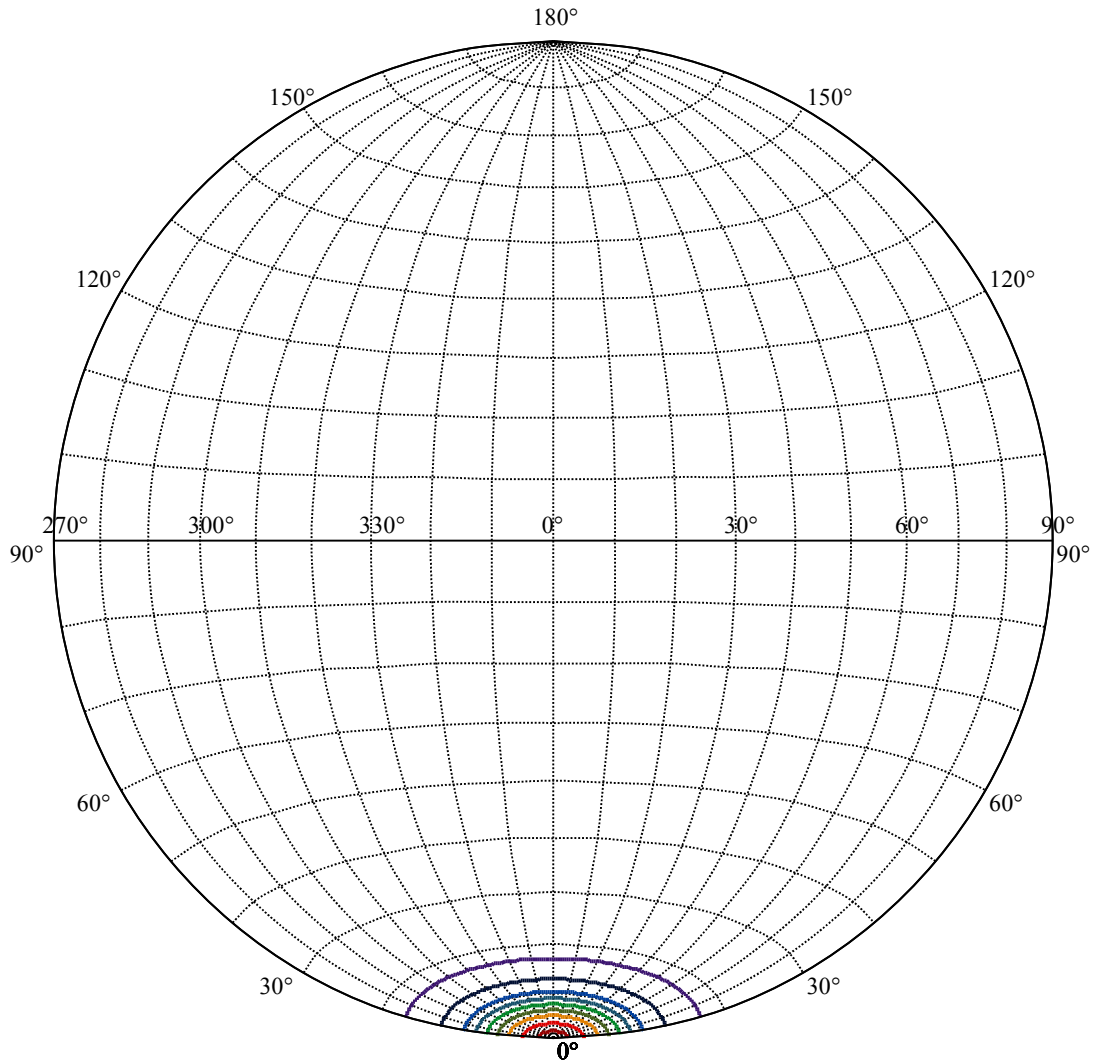
C90/C270: —————

Field angle(10%Imax):C0/180Left:17.2 Right:17.2
:C90/270Left:17.2 Right:17.2

Beam Angle(50%Imax):C0/180Left:7.7 Right:7.7
:C90/270Left:7.7 Right:7.7



| | |
|-------------------|---|
| (10%Imax) 881.494 | — |
| (20%Imax) 1762.99 | — |
| (30%Imax) 2644.48 | — |
| (40%Imax) 3525.98 | — |
| (50%Imax) 4407.47 | — |
| (60%Imax) 5288.97 | — |
| (70%Imax) 6170.46 | — |
| (80%Imax) 7051.95 | — |
| (90%Imax) 7933.45 | — |



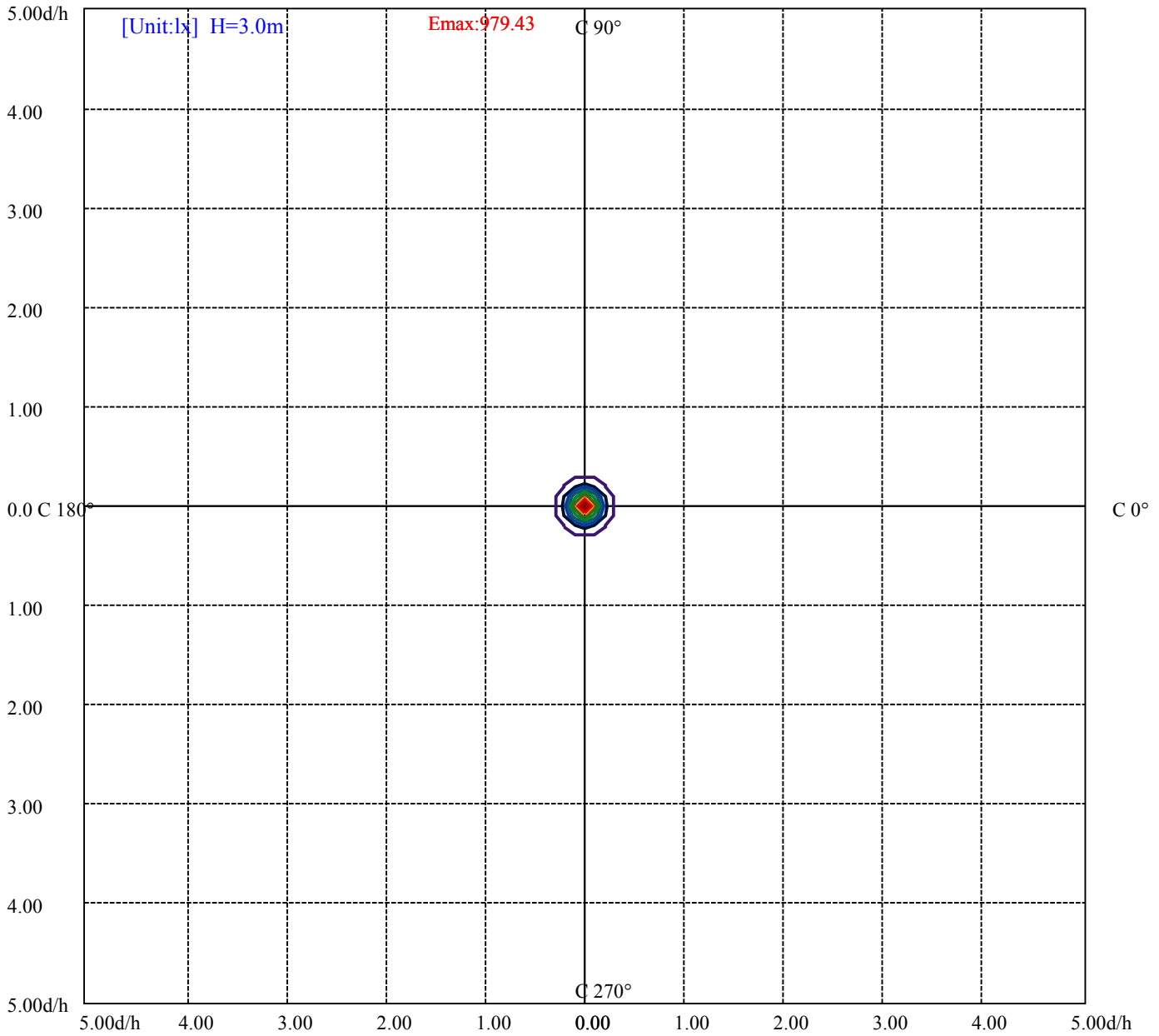
House

[Unit:cd]

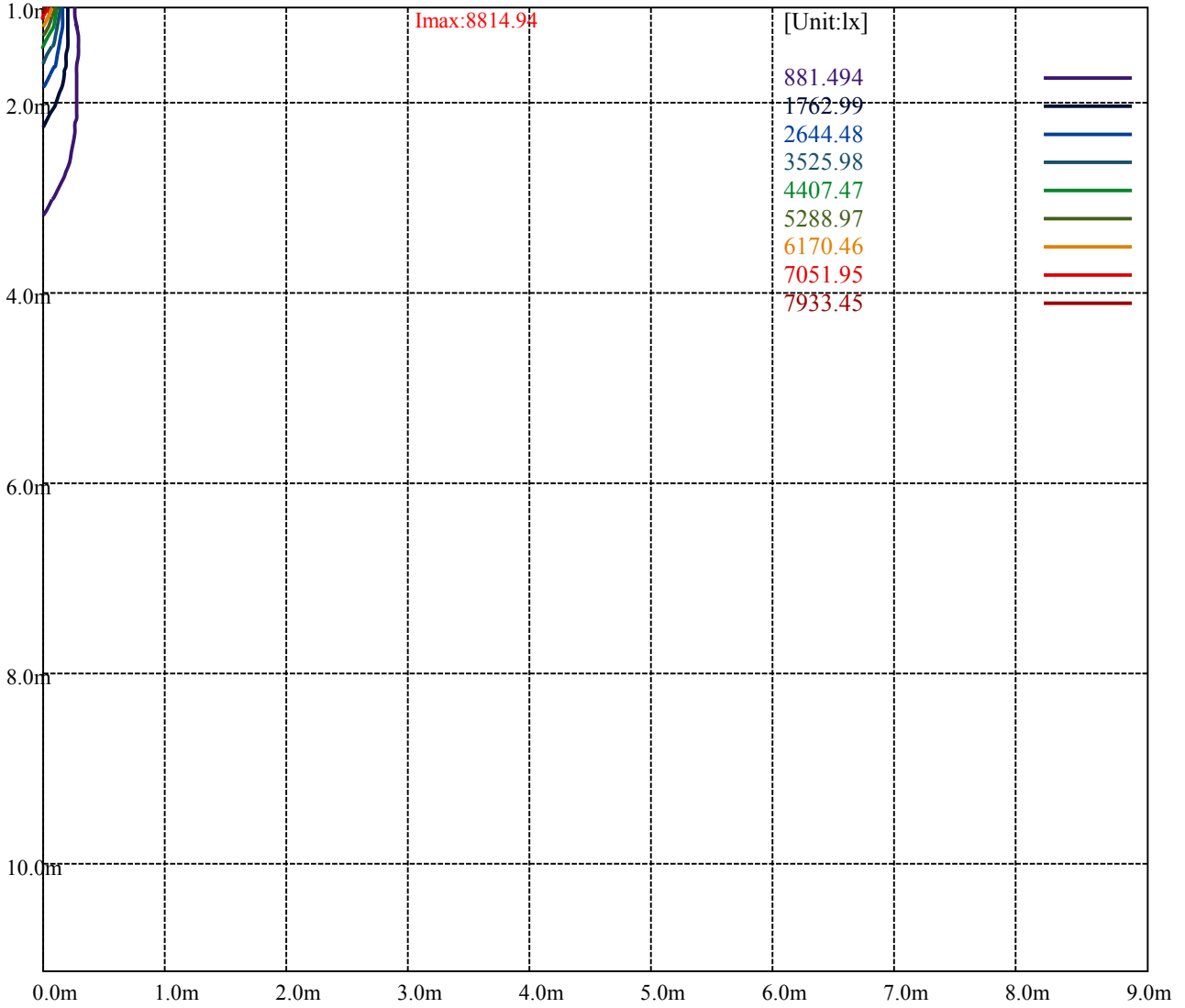
Road

Imax:8814.94

| | | |
|-----------|---------|---|
| (10%Imax) | 881.494 | — |
| (20%Imax) | 1762.99 | — |
| (30%Imax) | 2644.48 | — |
| (40%Imax) | 3525.98 | — |
| (50%Imax) | 4407.47 | — |
| (60%Imax) | 5288.97 | — |
| (70%Imax) | 6170.46 | — |
| (80%Imax) | 7051.95 | — |
| (90%Imax) | 7933.45 | — |



- (10%Emax) 97.943
- (20%Emax) 195.8856
- (30%Emax) 293.8289
- (40%Emax) 391.7722
- (50%Emax) 489.7145
- (60%Emax) 587.6578
- (70%Emax) 685.6011
- (80%Emax) 783.5433
- (90%Emax) 881.4866



Luminance Table

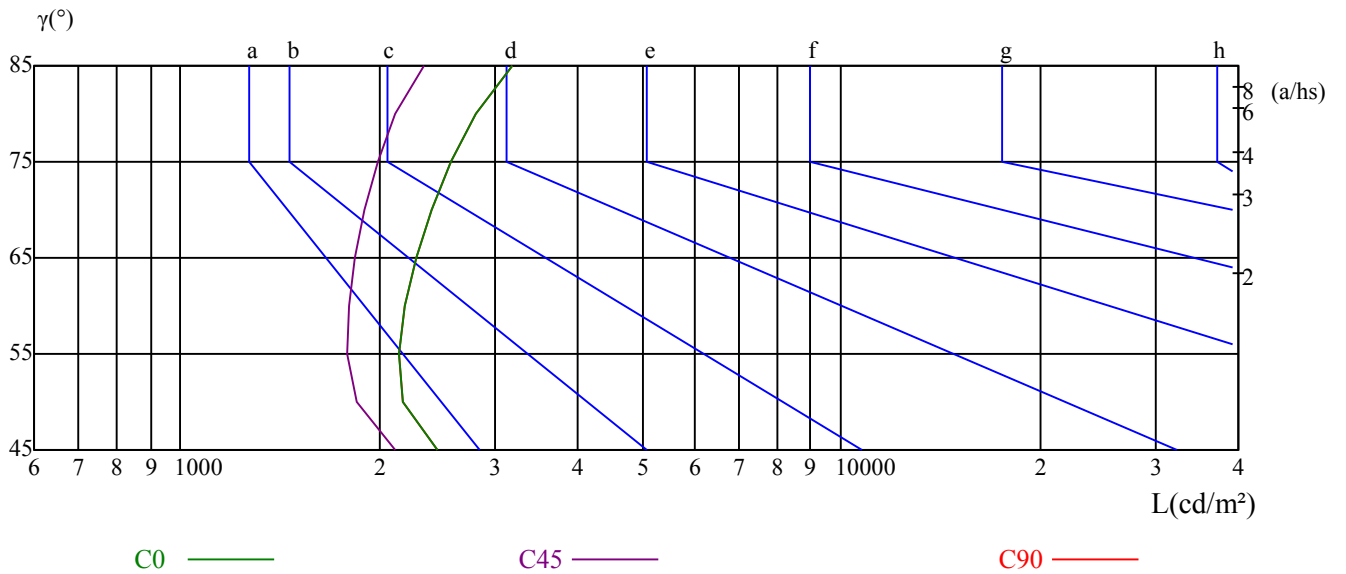
| γ | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 |
|----------|------|------|------|------|------|------|------|------|------|
| C0 | 2450 | 2175 | 2145 | 2193 | 2275 | 2402 | 2570 | 2800 | 3189 |
| C45 | 2110 | 1845 | 1791 | 1801 | 1836 | 1900 | 1989 | 2114 | 2337 |
| C90 | 2450 | 2175 | 2145 | 2193 | 2275 | 2402 | 2570 | 2800 | 3189 |

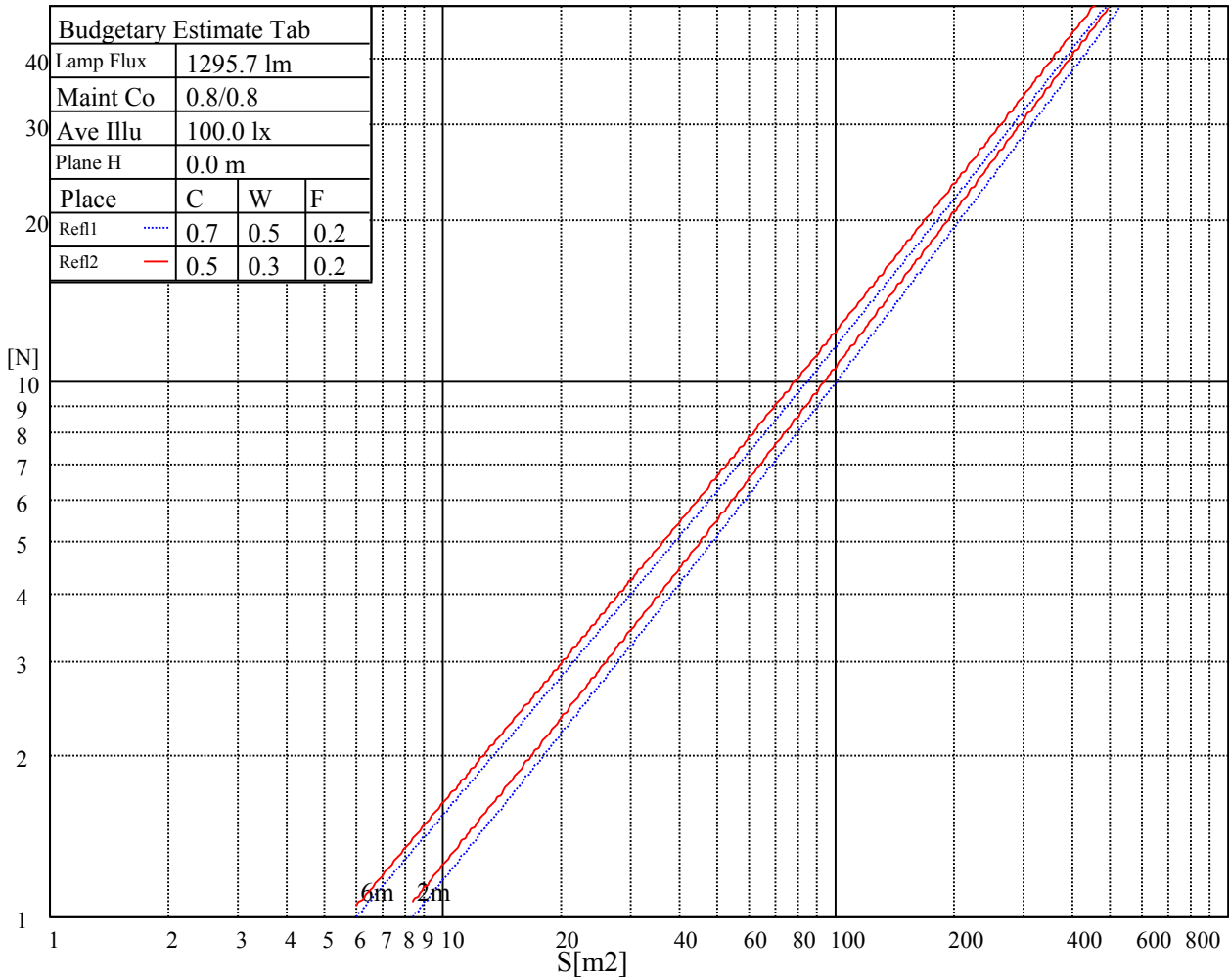
| L(Hor)(65) | L(Ver)(65) | L45(65) | L(Hor)(75) | L(Ver)(75) | L45(75) | L(Hor)(85) | L(Ver)(85) | L45(85) |
|------------|------------|---------|------------|------------|---------|------------|------------|---------|
| 5389 | 5389 | 5389 | 8691 | 8691 | 8691 | 26452 | 26452 | 26452 |

Glare Table

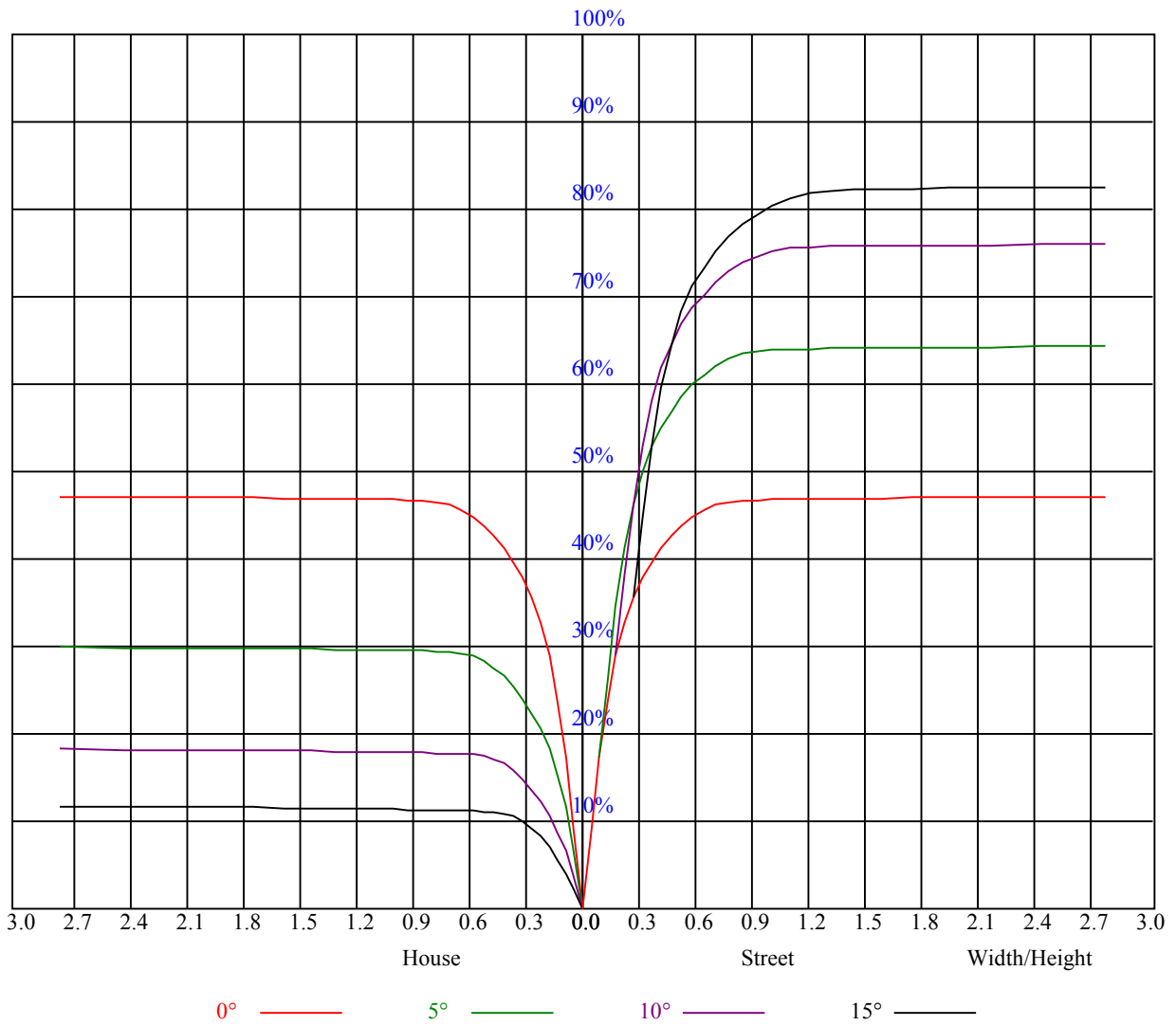
| Glare | Quality | Service Values Illuminance(lx) | | | | | | | |
|-------|---------|--------------------------------|------|------|-------|-------|-------|-------|-------|
| 1.15 | A | 2000 | 1000 | 500 | <=300 | | | | |
| 1.5 | B | | 2000 | 1000 | 500 | <=300 | | | |
| 1.85 | C | | | 2000 | 1000 | 500 | <=300 | | |
| 2.2 | D | | | | 2000 | 1000 | 500 | <=300 | |
| 2.55 | E | | | | | 2000 | 1000 | 500 | <=300 |
| | | a | b | c | d | e | f | g | h |

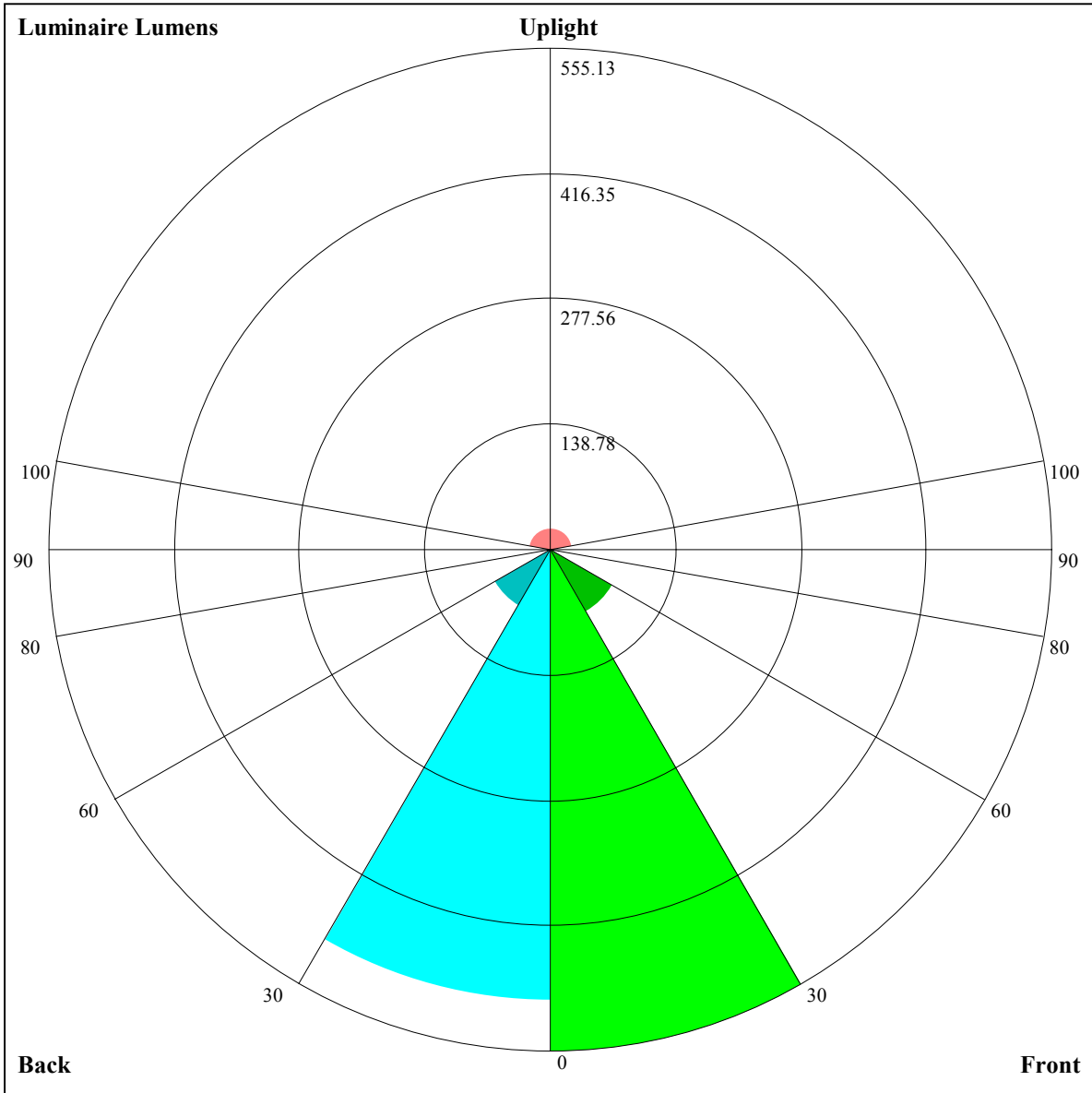
Luminance Limiting Curve





| 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 | 1.16 | 1.16 | 1.16 | 1.13 | 1.13 | 1.13 | 1.08 | 1.08 | 1.08 | 1.04 | 1.04 | 1.04 | 0.99 | 0.99 | 0.99 | 0.97 |
| 1 | 1.04 | 1.01 | 0.98 | 1.02 | 0.99 | 0.97 | 0.98 | 0.96 | 0.94 | 0.95 | 0.93 | 0.91 | 0.91 | 0.90 | 0.88 | 0.86 |
| 2 | 0.99 | 0.95 | 0.92 | 0.98 | 0.94 | 0.91 | 0.94 | 0.91 | 0.89 | 0.92 | 0.89 | 0.87 | 0.89 | 0.87 | 0.85 | 0.83 |
| 3 | 0.95 | 0.90 | 0.87 | 0.94 | 0.89 | 0.86 | 0.91 | 0.88 | 0.85 | 0.89 | 0.86 | 0.83 | 0.87 | 0.84 | 0.82 | 0.81 |
| 4 | 0.91 | 0.86 | 0.83 | 0.90 | 0.86 | 0.82 | 0.88 | 0.84 | 0.81 | 0.86 | 0.83 | 0.80 | 0.84 | 0.82 | 0.79 | 0.78 |
| 5 | 0.88 | 0.83 | 0.79 | 0.87 | 0.82 | 0.79 | 0.85 | 0.81 | 0.78 | 0.84 | 0.80 | 0.78 | 0.82 | 0.79 | 0.77 | 0.76 |
| 6 | 0.85 | 0.80 | 0.77 | 0.84 | 0.80 | 0.76 | 0.83 | 0.79 | 0.76 | 0.81 | 0.78 | 0.75 | 0.80 | 0.77 | 0.75 | 0.74 |
| 7 | 0.82 | 0.78 | 0.74 | 0.82 | 0.77 | 0.74 | 0.80 | 0.77 | 0.74 | 0.79 | 0.76 | 0.73 | 0.78 | 0.75 | 0.73 | 0.72 |
| 8 | 0.80 | 0.75 | 0.72 | 0.79 | 0.75 | 0.72 | 0.78 | 0.74 | 0.72 | 0.77 | 0.74 | 0.71 | 0.77 | 0.74 | 0.71 | 0.70 |
| 9 | 0.78 | 0.73 | 0.70 | 0.77 | 0.73 | 0.70 | 0.76 | 0.73 | 0.70 | 0.76 | 0.72 | 0.70 | 0.75 | 0.72 | 0.70 | 0.69 |
| 10 | 0.76 | 0.71 | 0.69 | 0.75 | 0.71 | 0.68 | 0.75 | 0.71 | 0.68 | 0.74 | 0.71 | 0.68 | 0.73 | 0.70 | 0.68 | 0.67 |





Luminaire Lumens:

FL=555.13,FM=79.86,FH=5.13,FVH=2.7

BL=499.72,BM=71.47,BH=5.13,BVH=2.75

UL=5.35,UH=25.44

BUG Rating:B1-U2-G0

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 | 8787.55 | 7336.27 | 3563.25 | 1351.08 | 648.01 | 474.04 | 423.38 | 291.25 | 37.11 |
| 45.0 | 8709.37 | 7615.40 | 3766.41 | 1421.01 | 689.86 | 492.75 | 424.48 | 287.94 | 74.27 |
| 90.0 | 8920.79 | 6556.12 | 2823.84 | 1066.94 | 627.26 | 467.87 | 416.23 | 241.86 | 29.95 |
| 135.0 | 8842.06 | 6926.65 | 2978.00 | 1258.59 | 648.01 | 480.64 | 425.59 | 285.74 | 32.21 |
| 180.0 | 8787.55 | 5125.20 | 2210.51 | 913.72 | 557.45 | 454.05 | 397.18 | 161.76 | 13.87 |
| 225.0 | 8709.37 | 4945.72 | 2000.75 | 840.05 | 534.76 | 440.78 | 376.92 | 129.00 | 11.62 |
| 270.0 | 8920.79 | 6109.06 | 2419.73 | 969.54 | 585.25 | 460.82 | 406.32 | 287.94 | 15.64 |
| 315.0 | 8842.06 | 5658.15 | 2327.78 | 937.67 | 568.40 | 453.83 | 399.60 | 161.65 | 14.87 |
| 360.0 | 8787.55 | 7336.27 | 3563.25 | 1351.08 | 648.01 | 474.04 | 423.38 | 291.25 | 37.11 |
| C/ γ (°) | 45.0 | 50.0 | 55.0 | 60.0 | 65.0 | 70.0 | 75.0 | 80.0 | 85.0 |
| 0.0 | 6.94 | 5.51 | 5.23 | 5.07 | 5.01 | 4.96 | 4.96 | 4.96 | 4.96 |
| 45.0 | 7.82 | 5.56 | 5.29 | 5.18 | 5.07 | 5.07 | 5.01 | 5.01 | 5.07 |
| 90.0 | 5.89 | 5.45 | 5.18 | 5.12 | 5.01 | 4.96 | 4.96 | 4.96 | 5.07 |
| 135.0 | 6.06 | 5.45 | 5.23 | 5.12 | 5.07 | 5.01 | 4.96 | 4.96 | 5.18 |
| 180.0 | 5.78 | 5.34 | 5.18 | 5.07 | 5.01 | 5.01 | 4.96 | 4.96 | 5.56 |
| 225.0 | 5.84 | 5.40 | 5.18 | 5.12 | 5.07 | 5.01 | 5.01 | 5.01 | 5.07 |
| 270.0 | 5.95 | 5.45 | 5.18 | 5.07 | 5.01 | 5.01 | 4.96 | 4.96 | 4.90 |
| 315.0 | 5.89 | 5.34 | 5.12 | 5.07 | 5.01 | 4.96 | 4.96 | 4.90 | 4.96 |
| 360.0 | 6.94 | 5.51 | 5.23 | 5.07 | 5.01 | 4.96 | 4.96 | 4.96 | 4.96 |
| C/ γ (°) | 90.0 | | | | | | | | |
| 0.0 | 4.90 | | | | | | | | |
| 45.0 | 4.96 | | | | | | | | |
| 90.0 | 4.84 | | | | | | | | |
| 135.0 | 4.90 | | | | | | | | |
| 180.0 | 4.90 | | | | | | | | |
| 225.0 | 4.96 | | | | | | | | |
| 270.0 | 4.90 | | | | | | | | |
| 315.0 | 4.84 | | | | | | | | |
| 360.0 | 4.90 | | | | | | | | |