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NATA

Client:

LumCAT: 2-1284-N

Luminaire: 92.70.046.00

Report No: nt0100

Voltage(V): 34.1800

Test No: GC2020010821

Current(A): 0.3070

LampCAT: LUMINUS CLM-9-AA40

Power (W): 10.4900

Lamp flux(lm): 1288.0

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): 1071.16, Efficiency(%): 83.16% , Luminous Efficacy(lm/W): 102.11

Central intensity(cd): 3223.688, Maximum intensity(cd): 3223.688

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=25.0

[C90/270]Total=25.0

Field angle(10%Imax): [C0/180]Total=64.0

[C90/270]Total=64.0

Maximum s/h(1/2): C0_180=0.42 C90_270=0.42

Maximum s/h(1/4): C0_180=0.48 C90_270=0.48

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 83.16%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 97.654%

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2020/1/8
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

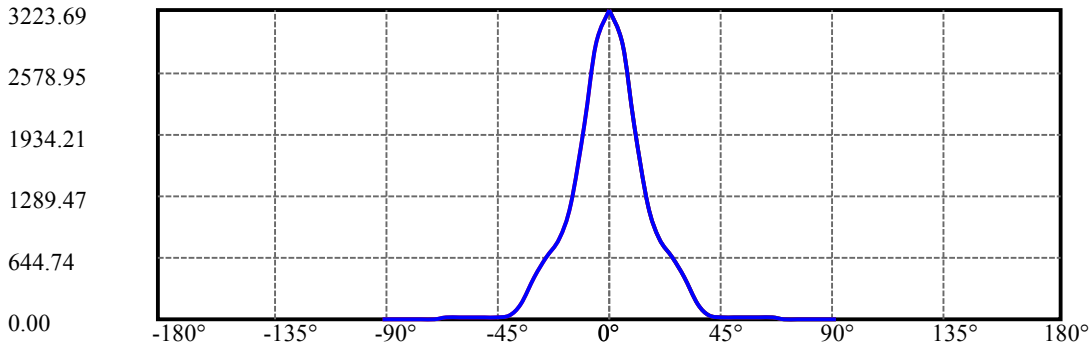
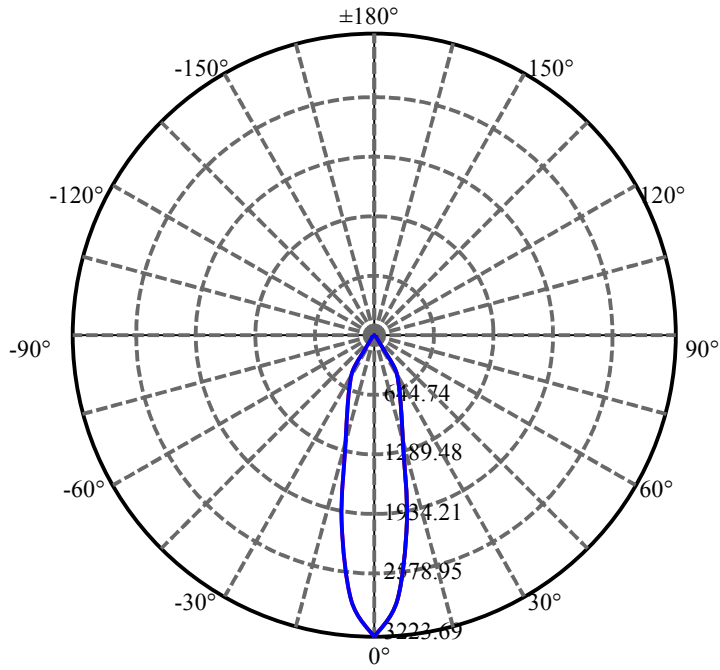
| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 0.0 | 3223.688 | 0.000 | 0 | .000% | .000% |
| 5.0 | 2853.422 | 72.650 | 72.65 | 5.641% | 6.782% |
| 10.0 | 2023.172 | 174.451 | 247.101 | 13.544% | 23.069% |
| 15.0 | 1206.141 | 191.561 | 438.662 | 14.873% | 40.952% |
| 20.0 | 846.900 | 169.199 | 607.861 | 13.137% | 56.748% |
| 25.0 | 632.461 | 155.158 | 763.019 | 12.046% | 71.233% |
| 30.0 | 432.738 | 134.802 | 897.821 | 10.466% | 83.818% |
| 35.0 | 155.088 | 86.562 | 984.382 | 6.721% | 91.899% |
| 40.0 | 30.354 | 30.940 | 1015.322 | 2.402% | 94.787% |
| 45.0 | 20.032 | 9.329 | 1024.651 | .724% | 95.658% |
| 50.0 | 17.297 | 7.543 | 1032.194 | .586% | 96.363% |
| 55.0 | 15.708 | 7.176 | 1039.37 | .557% | 97.032% |
| 60.0 | 13.106 | 6.660 | 1046.031 | .517% | 97.654% |
| 65.0 | 10.680 | 5.783 | 1051.813 | .449% | 98.194% |
| 70.0 | 8.859 | 4.948 | 1056.761 | .384% | 98.656% |
| 75.0 | 7.313 | 4.227 | 1060.988 | .328% | 99.051% |
| 80.0 | 6.616 | 3.727 | 1064.715 | .289% | 99.399% |
| 85.0 | 5.984 | 3.424 | 1068.139 | .266% | 99.718% |
| 90.0 | 5.041 | 3.019 | 1071.157 | .234% | 100.000% |

ZONAL LUMEN SUMMARY

| Zone | Lumens | %Lamp | %Fixt |
|---------|---------|--------|---------|
| 0-30 | 897.82 | 69.71% | 83.82% |
| 0-40 | 1015.32 | 78.83% | 94.79% |
| 0-60 | 1046.03 | 81.21% | 97.65% |
| 0-90 | 1068.14 | 82.93% | 99.72% |
| 0-120 | 1068.14 | 82.93% | 99.72% |
| 0-180 | 1071.16 | 83.16% | 100.00% |
| 60-90 | 28.77 | 2.23% | 2.69% |
| 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% |
| 0-28.48 | 856.93 | 66.53% | 80.00% |

ZONAL LUMEN SUMMARY

| | |
|---------|--------|
| 0-10 | 247.10 |
| 10-20 | 360.76 |
| 20-30 | 289.96 |
| 30-40 | 117.50 |
| 40-50 | 16.87 |
| 50-60 | 13.84 |
| 60-70 | 10.73 |
| 70-80 | 7.95 |
| 80-90 | 3.42 |
| 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 |



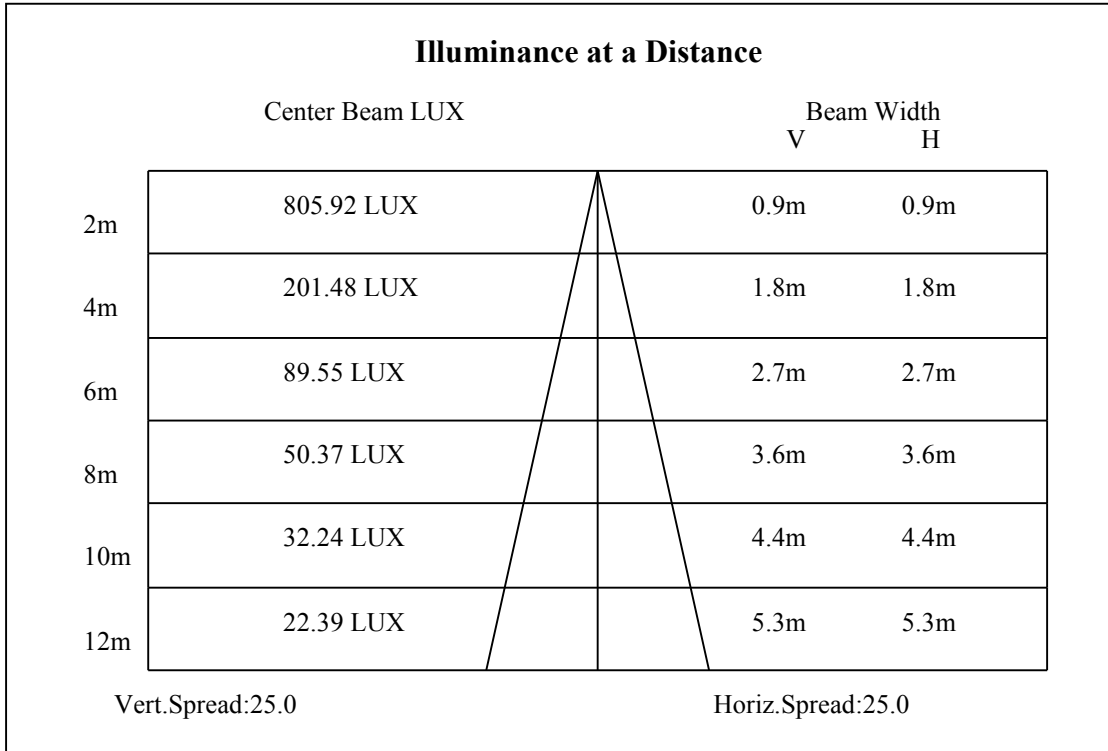
C0(Max): —————

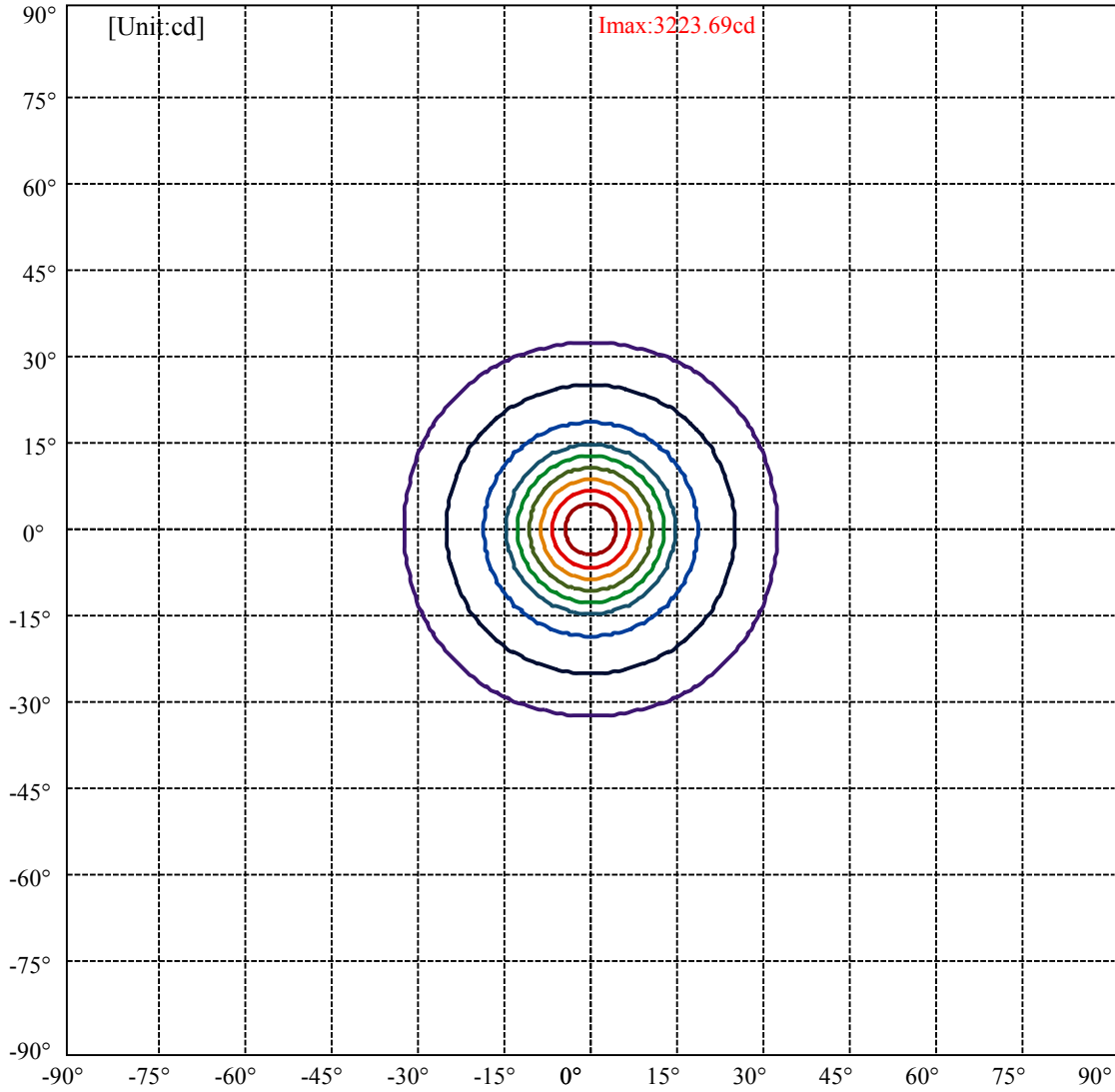
C0/C180: —————

C90/C270: —————

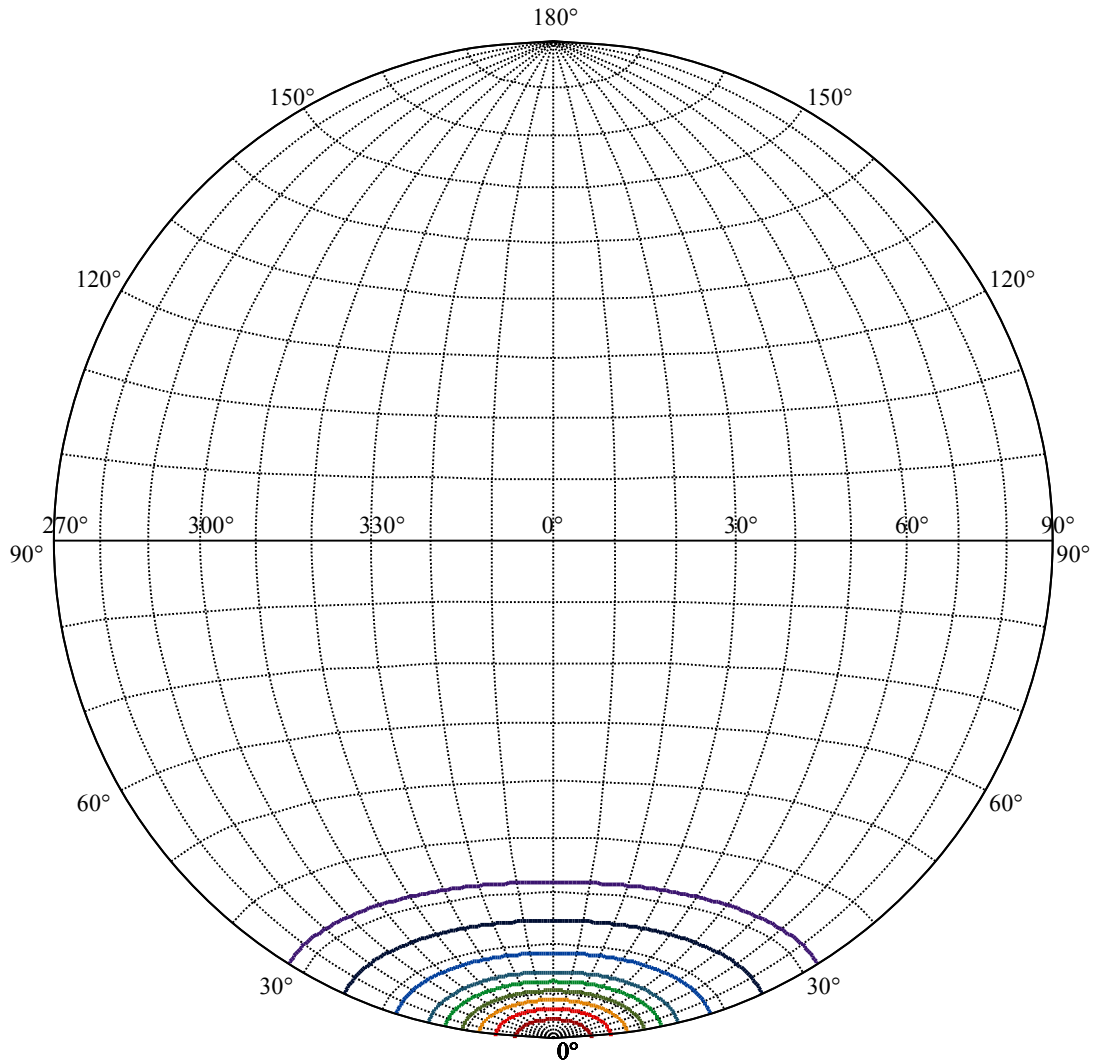
Field angle(10%Imax):C0/180Left:32.0 Right:32.0
:C90/270Left:32.0 Right:32.0

Beam Angle(50%Imax):C0/180Left:12.5 Right:12.5
:C90/270Left:12.5 Right:12.5





| | |
|-------------------|---|
| (10%Imax) 322.369 | — |
| (20%Imax) 644.737 | — |
| (30%Imax) 967.106 | — |
| (40%Imax) 1289.47 | — |
| (50%Imax) 1611.84 | — |
| (60%Imax) 1934.21 | — |
| (70%Imax) 2256.58 | — |
| (80%Imax) 2578.95 | — |
| (90%Imax) 2901.32 | — |



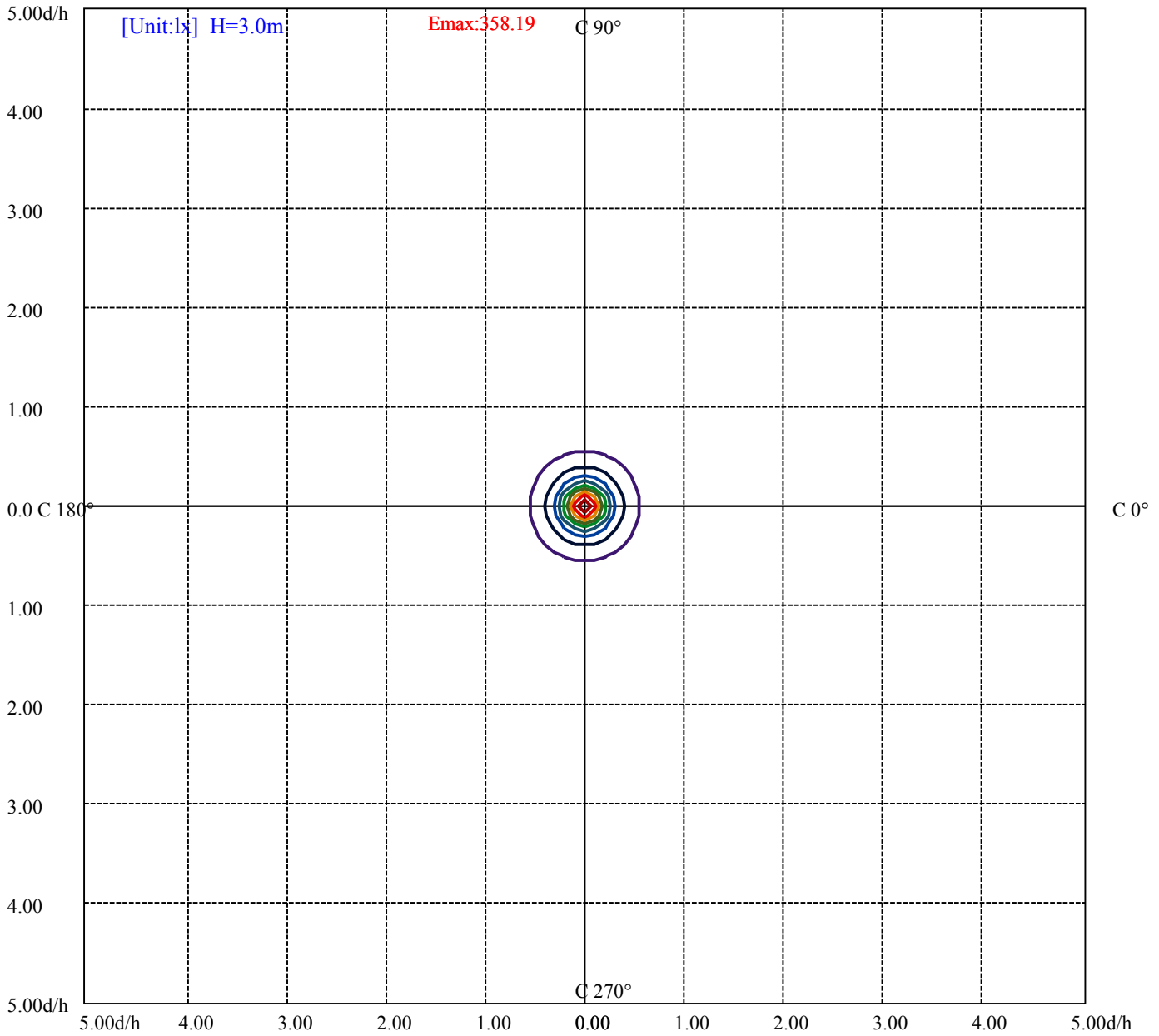
House

[Unit:cd]

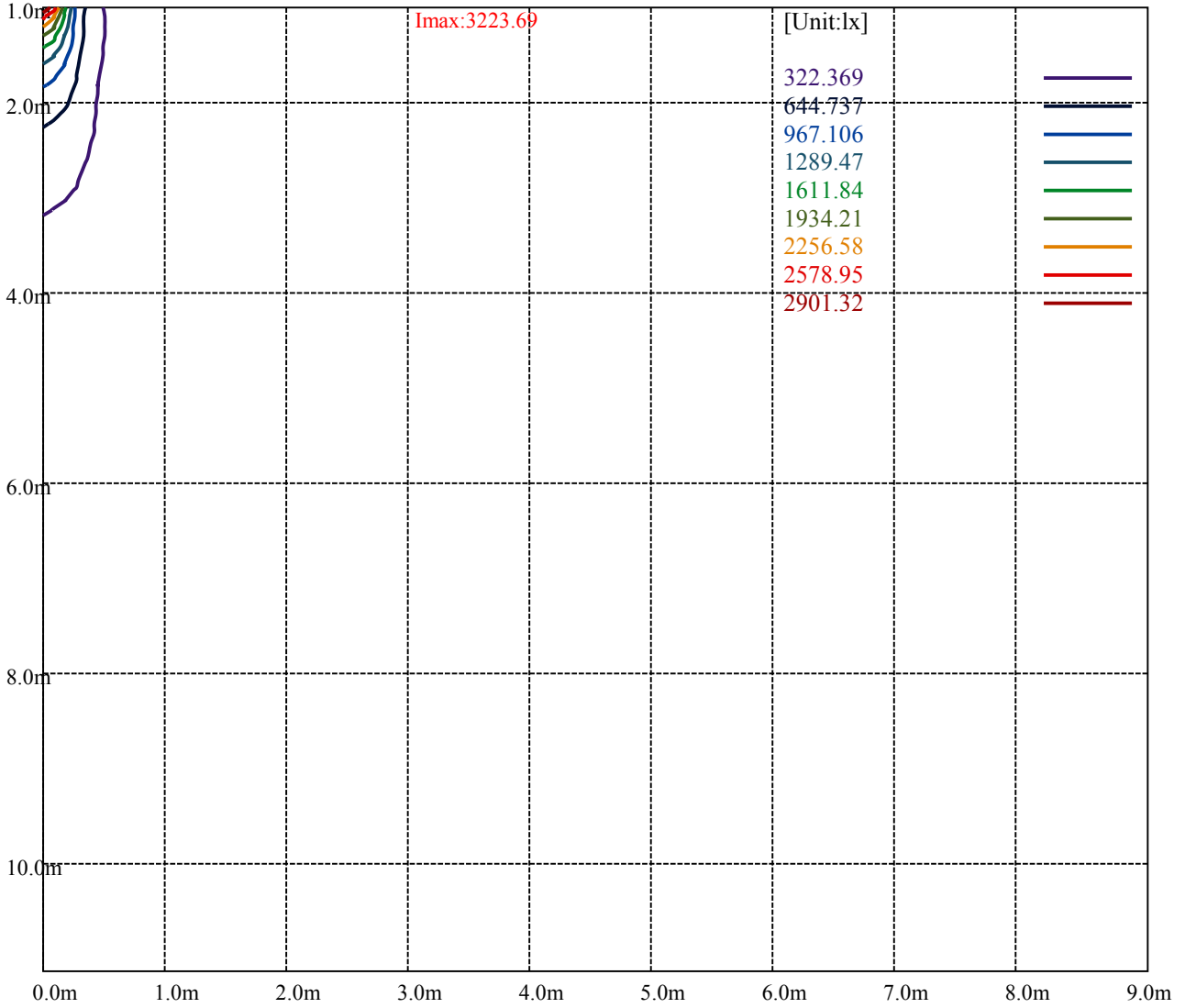
Road

Imax:3223.69

| | |
|-------------------|---|
| (10%Imax) 322.369 | — |
| (20%Imax) 644.737 | — |
| (30%Imax) 967.106 | — |
| (40%Imax) 1289.47 | — |
| (50%Imax) 1611.84 | — |
| (60%Imax) 1934.21 | — |
| (70%Imax) 2256.58 | — |
| (80%Imax) 2578.95 | — |
| (90%Imax) 2901.32 | — |



- (10%Emax) 35.81867
- (20%Emax) 71.63722
- (30%Emax) 107.4559
- (40%Emax) 143.2744
- (50%Emax) 179.0933
- (60%Emax) 214.9122
- (70%Emax) 250.73
- (80%Emax) 286.5489
- (90%Emax) 322.3678



Luminance Table

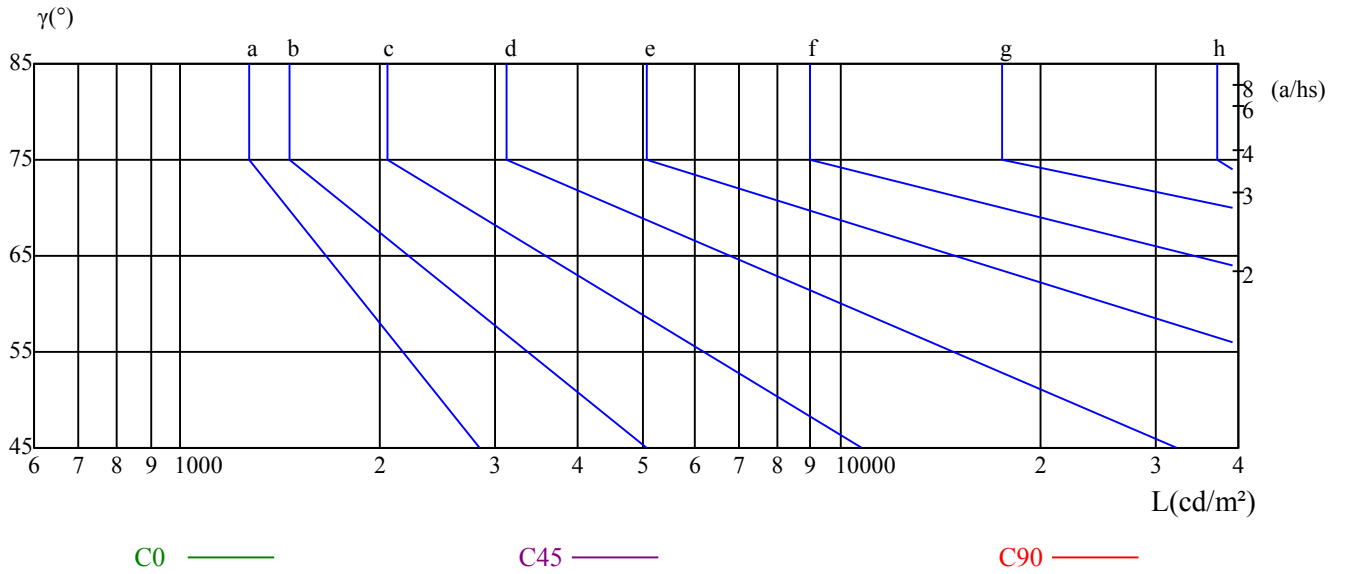
| γ | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 |
|----------|----|----|----|----|----|----|----|----|----|
| C0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C90 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

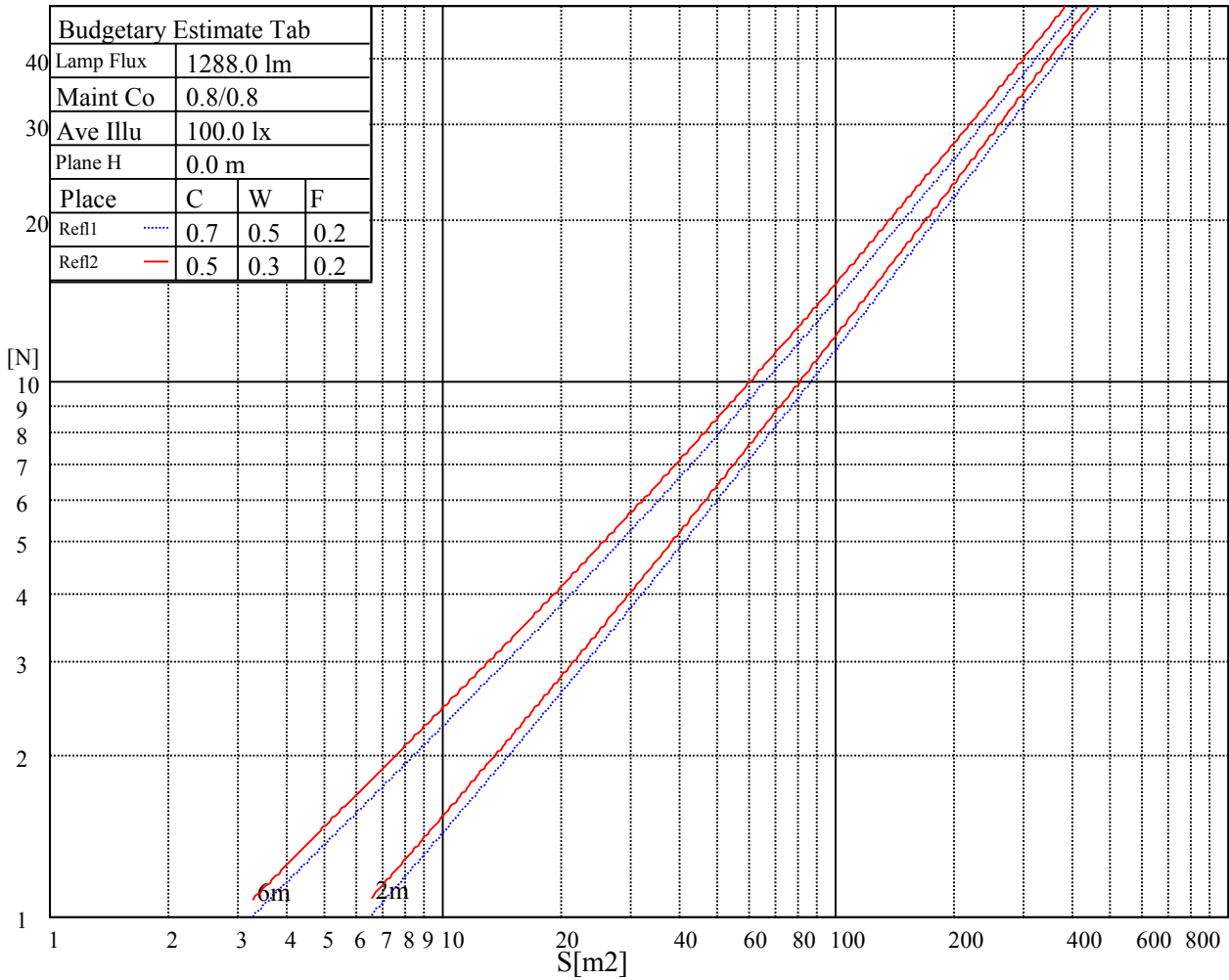
| L(Hor)(65) | L(Ver)(65) | L45(65) | L(Hor)(75) | L(Ver)(75) | L45(75) | L(Hor)(85) | L(Ver)(85) | L45(85) |
|------------|------------|---------|------------|------------|---------|------------|------------|---------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Glare Table

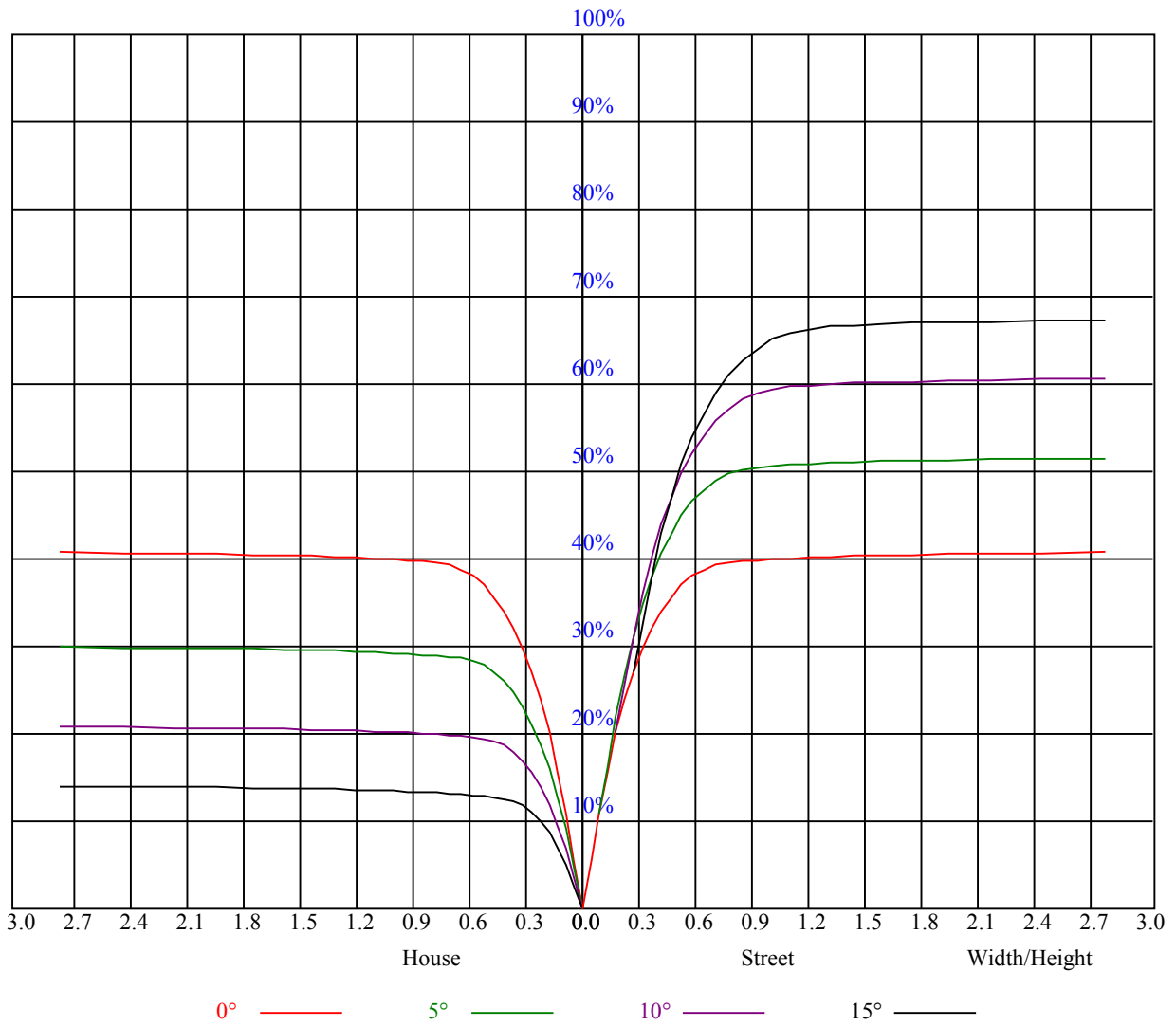
| Glare | Quality | Service Values Illuminance(lx) | | | | | | | |
|-------|---------|--------------------------------|------|------|-------|-------|-------|-------|-------|
| 1.15 | A | 2000 | 1000 | 500 | <=300 | | | | |
| 1.5 | B | | 2000 | 1000 | 500 | <=300 | | | |
| 1.85 | C | | | 2000 | 1000 |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

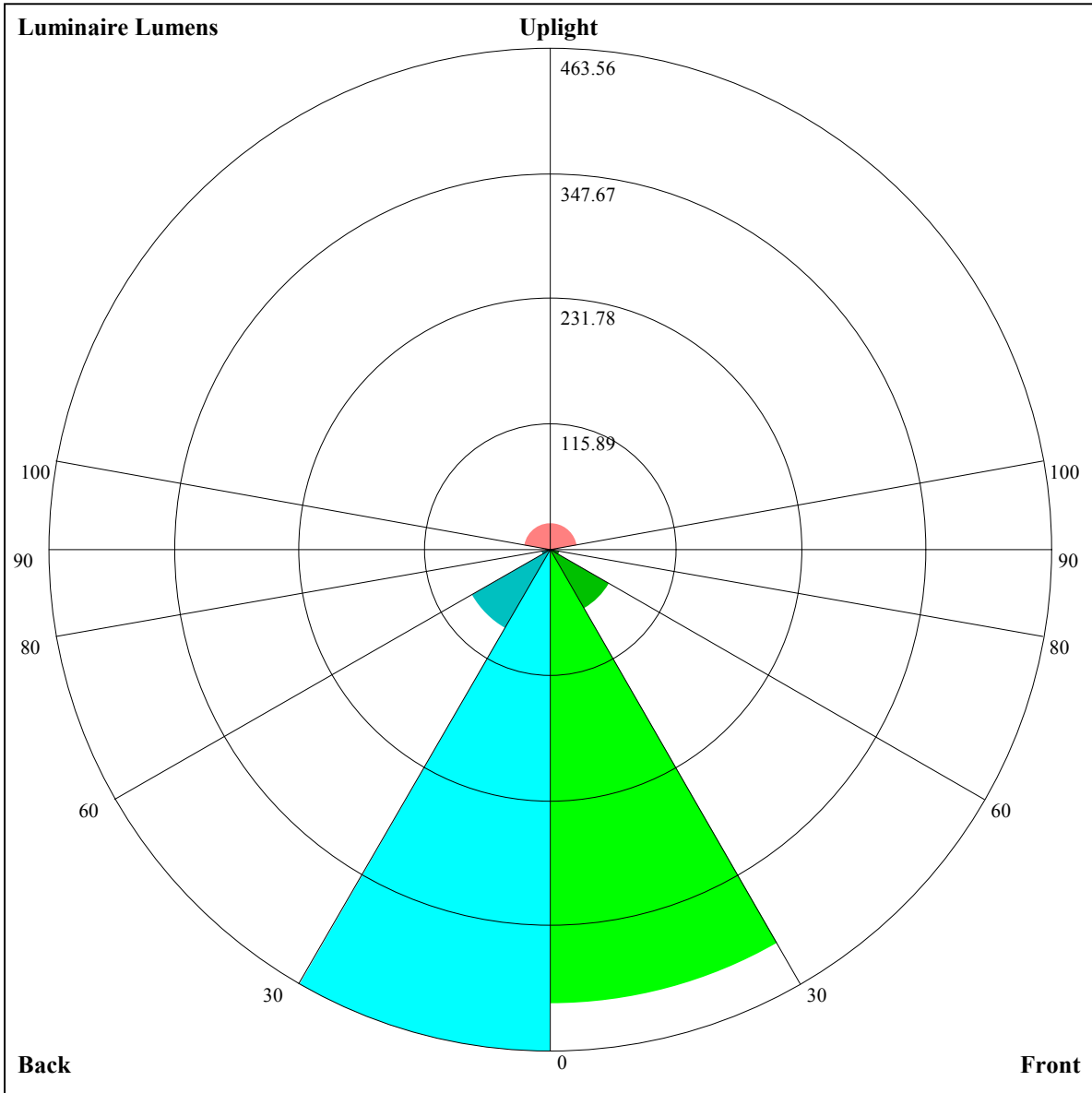
Luminance Limiting Curve





| 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 | 0.99 | 0.99 | 0.99 | 0.97 | 0.97 | 0.97 | 0.92 | 0.92 | 0.92 | 0.88 | 0.88 | 0.88 | 0.85 | 0.85 | 0.85 | 0.83 |
| 1 | 0.93 | 0.91 | 0.89 | 0.91 | 0.89 | 0.87 | 0.87 | 0.86 | 0.85 | 0.84 | 0.83 | 0.82 | 0.81 | 0.81 | 0.80 | 0.78 |
| 2 | 0.87 | 0.84 | 0.81 | 0.86 | 0.83 | 0.80 | 0.83 | 0.81 | 0.79 | 0.80 | 0.79 | 0.77 | 0.78 | 0.77 | 0.75 | 0.74 |
| 3 | 0.82 | 0.78 | 0.75 | 0.81 | 0.78 | 0.75 | 0.79 | 0.76 | 0.74 | 0.77 | 0.74 | 0.72 | 0.75 | 0.73 | 0.71 | 0.70 |
| 4 | 0.78 | 0.74 | 0.71 | 0.77 | 0.73 | 0.70 | 0.75 | 0.72 | 0.69 | 0.73 | 0.71 | 0.69 | 0.72 | 0.70 | 0.68 | 0.67 |
| 5 | 0.74 | 0.70 | 0.66 | 0.73 | 0.69 | 0.66 | 0.72 | 0.68 | 0.66 | 0.70 | 0.67 | 0.65 | 0.69 | 0.67 | 0.65 | 0.63 |
| 6 | 0.70 | 0.66 | 0.63 | 0.70 | 0.66 | 0.63 | 0.69 | 0.65 | 0.62 | 0.67 | 0.64 | 0.62 | 0.66 | 0.64 | 0.62 | 0.60 |
| 7 | 0.67 | 0.63 | 0.60 | 0.67 | 0.63 | 0.60 | 0.66 | 0.62 | 0.59 | 0.65 | 0.62 | 0.59 | 0.64 | 0.61 | 0.59 | 0.58 |
| 8 | 0.64 | 0.60 | 0.57 | 0.64 | 0.60 | 0.57 | 0.63 | 0.59 | 0.57 | 0.62 | 0.59 | 0.57 | 0.62 | 0.59 | 0.56 | 0.55 |
| 9 | 0.62 | 0.58 | 0.55 | 0.61 | 0.57 | 0.55 | 0.61 | 0.57 | 0.54 | 0.60 | 0.57 | 0.54 | 0.59 | 0.56 | 0.54 | 0.53 |
| 10 | 0.59 | 0.55 | 0.52 | 0.59 | 0.55 | 0.52 | 0.58 | 0.55 | 0.52 | 0.58 | 0.54 | 0.52 | 0.57 | 0.54 | 0.52 | 0.51 |





Luminaire Lumens:

FL=420.82,FM=62.54,FH=8.98,FVH=3.25

BL=463.56,BM=83.91,BH=9.48,BVH=3.11

UL=5.5,UH=26.18

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 | 3246.75 | 2760.19 | 1826.44 | 1119.94 | 809.44 | 608.06 | 361.69 | 87.02 | 24.13 |
| 45.0 | 3221.44 | 2746.13 | 1808.44 | 1125.56 | 785.81 | 596.81 | 380.25 | 85.61 | 23.91 |
| 90.0 | 3214.69 | 2714.06 | 1866.38 | 1116.23 | 803.48 | 612.73 | 408.88 | 100.46 | 24.02 |
| 135.0 | 3211.88 | 3081.94 | 2285.44 | 1370.25 | 905.63 | 639.56 | 469.13 | 294.75 | 38.47 |
| 180.0 | 3246.75 | 3030.75 | 2266.88 | 1272.38 | 923.12 | 683.89 | 506.59 | 206.44 | 37.86 |
| 225.0 | 3221.44 | 2942.44 | 2244.94 | 1260.00 | 913.67 | 681.41 | 507.88 | 183.77 | 34.82 |
| 270.0 | 3214.69 | 2930.06 | 2153.25 | 1292.06 | 855.00 | 645.75 | 467.44 | 205.20 | 35.21 |
| 315.0 | 3211.88 | 2621.81 | 1733.63 | 1092.71 | 779.06 | 591.47 | 360.06 | 77.46 | 24.41 |
| 360.0 | 3246.75 | 2760.19 | 1826.44 | 1119.94 | 809.44 | 608.06 | 361.69 | 87.02 | 24.13 |
| C/ γ (°) | 45.0 | 50.0 | 55.0 | 60.0 | 65.0 | 70.0 | 75.0 | 80.0 | 85.0 |
| 0.0 | 18.56 | 16.37 | 14.40 | 12.15 | 9.79 | 7.82 | 6.81 | 5.85 | 5.46 |
| 45.0 | 18.06 | 16.88 | 15.19 | 12.88 | 10.86 | 9.51 | 9.28 | 9.51 | 8.44 |
| 90.0 | 17.89 | 15.92 | 14.51 | 12.38 | 9.96 | 7.59 | 6.58 | 5.96 | 5.40 |
| 135.0 | 22.39 | 18.45 | 16.82 | 13.84 | 10.91 | 8.89 | 6.92 | 6.13 | 5.46 |
| 180.0 | 21.99 | 18.23 | 17.04 | 14.51 | 11.81 | 9.84 | 7.31 | 6.36 | 5.85 |
| 225.0 | 20.87 | 17.27 | 16.76 | 14.40 | 12.15 | 10.58 | 7.88 | 6.86 | 6.30 |
| 270.0 | 21.38 | 17.16 | 15.58 | 12.71 | 10.29 | 9.11 | 7.09 | 6.24 | 5.68 |
| 315.0 | 19.13 | 18.11 | 15.36 | 11.98 | 9.68 | 7.54 | 6.64 | 6.02 | 5.29 |
| 360.0 | 18.56 | 16.37 | 14.40 | 12.15 | 9.79 | 7.82 | 6.81 | 5.85 | 5.46 |
| C/ γ (°) | 90.0 | | | | | | | | |
| 0.0 | 4.73 | | | | | | | | |
| 45.0 | 5.79 | | | | | | | | |
| 90.0 | 4.78 | | | | | | | | |
| 135.0 | 4.84 | | | | | | | | |
| 180.0 | 5.06 | | | | | | | | |
| 225.0 | 5.51 | | | | | | | | |
| 270.0 | 4.89 | | | | | | | | |
| 315.0 | 4.73 | | | | | | | | |
| 360.0 | 4.73 | | | | | | | | |