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Nata

Client:

LumCAT: 2-1651-A

Luminaire: 92.70.135.00+92.70.148.00

Report No: NT2018031212

Voltage(V): 35.0000

Test No: nata-0100

Current(A): 0.5000

LampCAT: LUMILEDS 1208

Power (W): 17.5000

Lamp flux(lm): 2262.0

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 70

Width(mm): 70

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 1946.53, Efficiency(%): 86.05% , Luminous Efficacy(lm/W): 111.23

Central intensity(cd): 5495.179, Maximum intensity(cd): 5495.179

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=30.6

[C90/270]Total=30.6

Field angle(10%Imax): [C0/180]Total=57.6

[C90/270]Total=57.6

Maximum s/h(1/2): C0_180=0.51 C90_270=0.51

Maximum s/h(1/4): C0_180=0.49 C90_270=0.49

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 87.42%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 96.772%

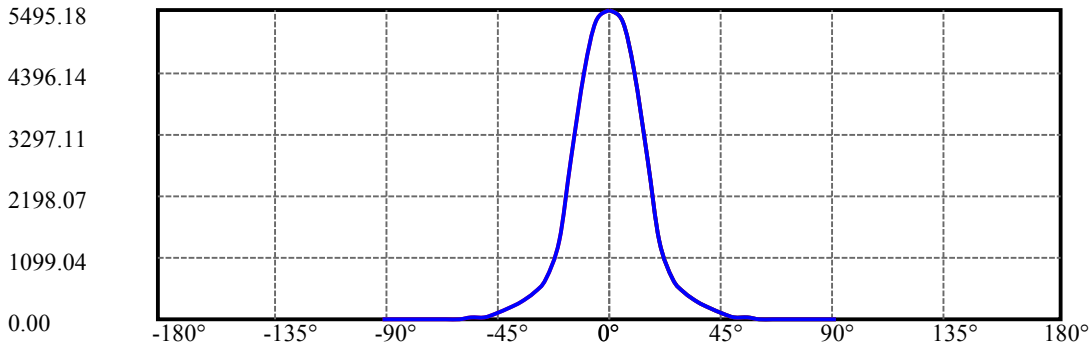
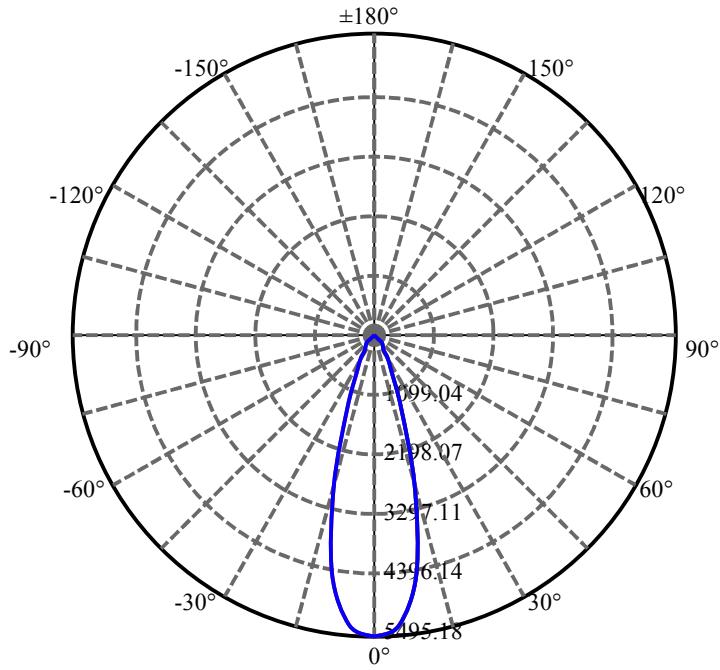
| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 0.0 | 5495.179 | 32.862 | 32.862 | 1.453% | 1.688% |
| 5.0 | 5294.361 | 252.929 | 285.791 | 11.182% | 14.682% |
| 10.0 | 4406.921 | 419.464 | 705.256 | 18.544% | 36.231% |
| 15.0 | 2820.677 | 400.165 | 1105.421 | 17.691% | 56.789% |
| 20.0 | 1399.155 | 262.305 | 1367.726 | 11.596% | 70.265% |
| 25.0 | 729.422 | 168.973 | 1536.698 | 7.470% | 78.946% |
| 30.0 | 492.596 | 135.005 | 1671.704 | 5.968% | 85.881% |
| 35.0 | 321.330 | 101.026 | 1772.729 | 4.466% | 91.071% |
| 40.0 | 194.452 | 68.513 | 1841.242 | 3.029% | 94.591% |
| 45.0 | 97.835 | 37.920 | 1879.162 | 1.676% | 96.539% |
| 50.0 | 48.305 | 20.283 | 1899.445 | .897% | 97.581% |
| 55.0 | 19.194 | 8.618 | 1908.064 | .381% | 98.024% |
| 60.0 | 11.865 | 5.632 | 1913.696 | .249% | 98.313% |
| 65.0 | 11.452 | 5.689 | 1919.385 | .252% | 98.605% |
| 70.0 | 11.300 | 5.821 | 1925.205 | .257% | 98.904% |
| 75.0 | 11.472 | 6.074 | 1931.279 | .269% | 99.216% |
| 80.0 | 13.117 | 7.081 | 1938.36 | .313% | 99.580% |
| 85.0 | 11.039 | 6.028 | 1944.388 | .266% | 99.890% |
| 90.0 | 7.818 | 2.143 | 1946.531 | .095% | 100.000% |

ZONAL LUMEN SUMMARY

| Zone | Lumens | %Lamp | %Fixt |
|---------|---------|--------|---------|
| 0-30 | 1671.70 | 73.90% | 85.88% |
| 0-40 | 1841.24 | 81.40% | 94.59% |
| 0-60 | 1913.70 | 84.60% | 98.31% |
| 0-90 | 1944.39 | 85.96% | 99.89% |
| 0-120 | 1944.39 | 85.96% | 99.89% |
| 0-180 | 1946.53 | 86.05% | 100.00% |
| 60-90 | 36.32 | 1.61% | 1.87% |
| 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% |
| 0-25.76 | 1557.22 | 68.84% | 80.00% |

ZONAL LUMEN SUMMARY

| | |
|---------|--------|
| 0-10 | 705.26 |
| 10-20 | 662.47 |
| 20-30 | 303.98 |
| 30-40 | 169.54 |
| 40-50 | 58.20 |
| 50-60 | 14.25 |
| 60-70 | 11.51 |
| 70-80 | 13.15 |
| 80-90 | 6.03 |
| 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: —————

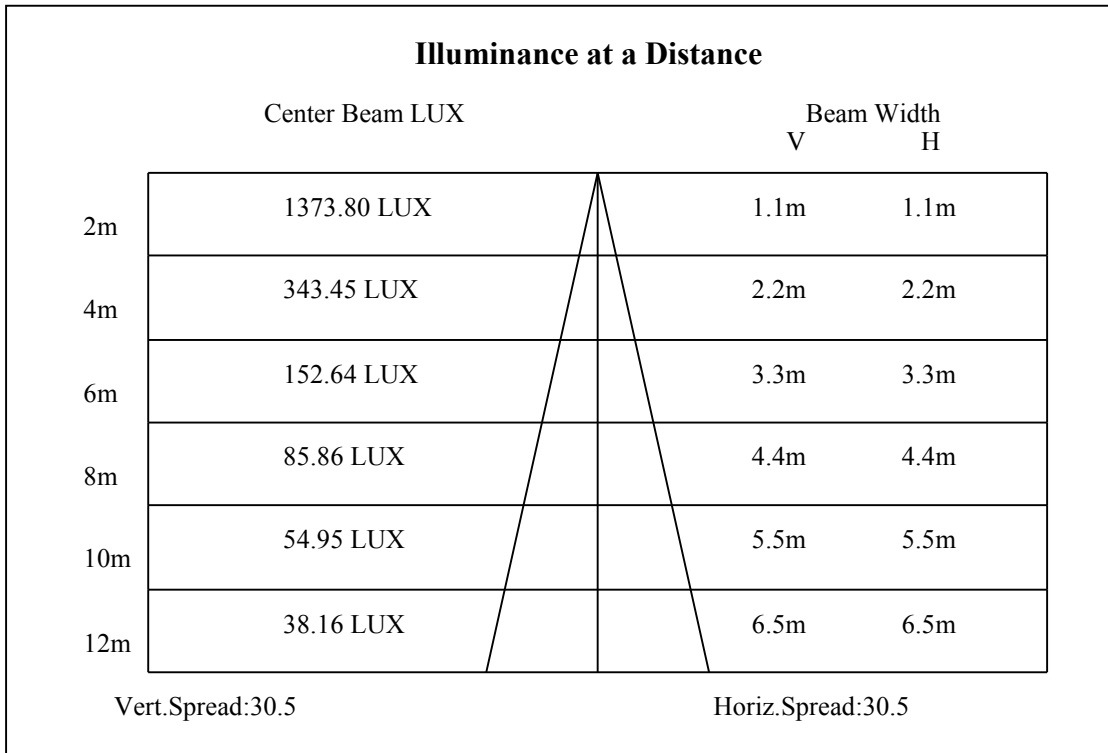
C90/C270: —————

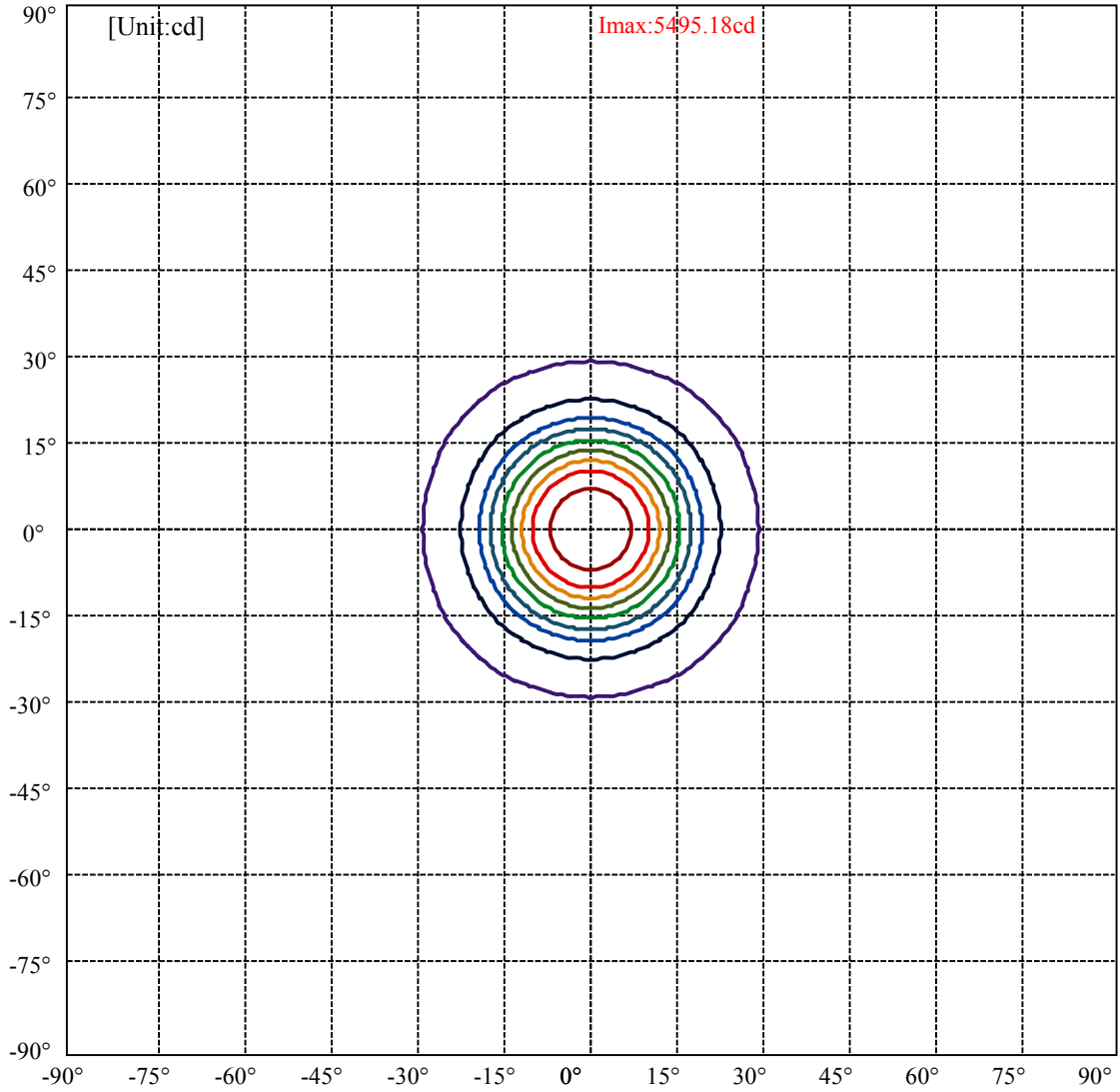
Field angle(10%Imax):C0/180Left:28.8 Right:28.8

:C90/270Left:28.8 Right:28.8

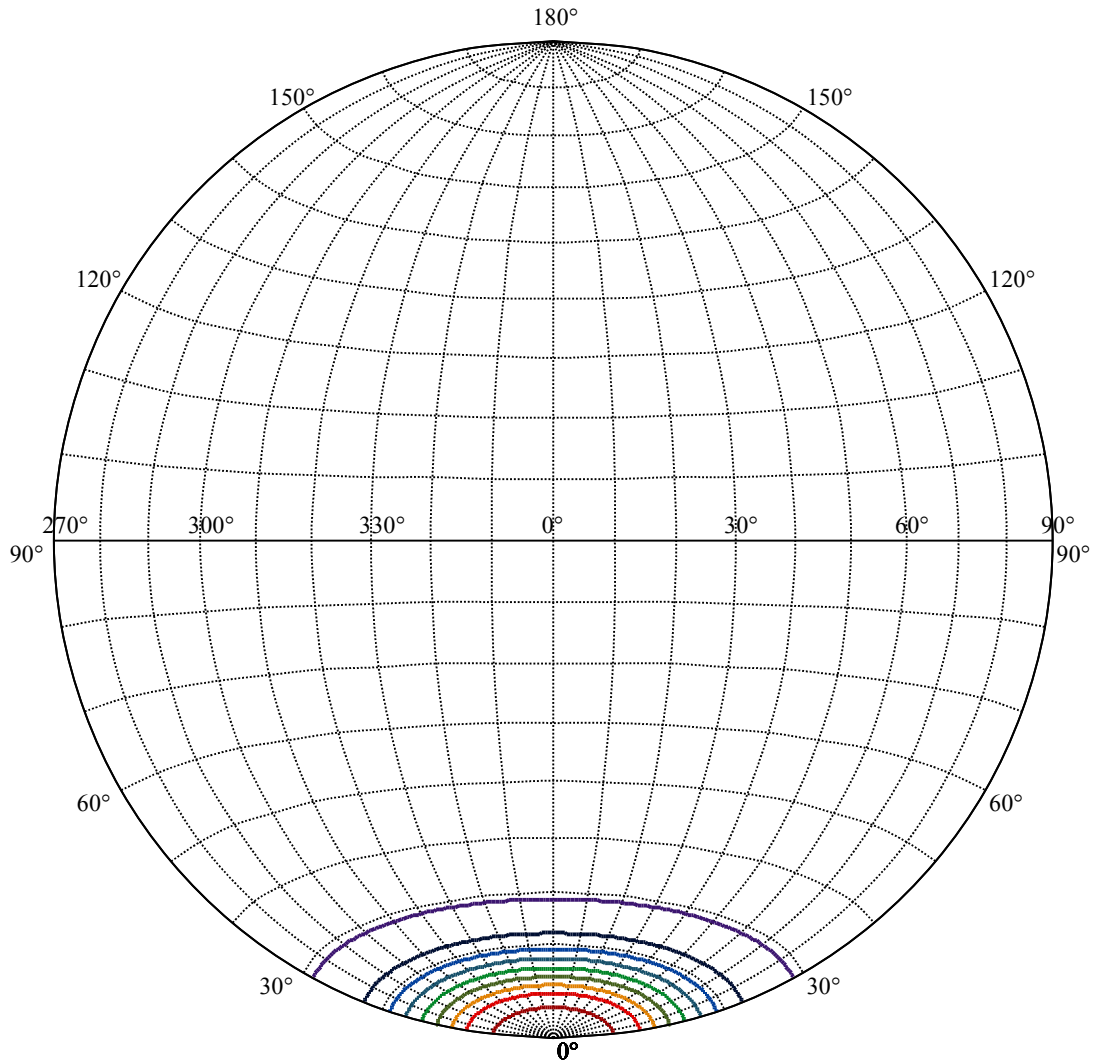
Beam Angle(50%Imax):C0/180Left:15.3 Right:15.3

:C90/270Left:15.3 Right:15.3





| | |
|-------------------|---|
| (10%Imax) 549.518 | — |
| (20%Imax) 1099.04 | — |
| (30%Imax) 1648.55 | — |
| (40%Imax) 2198.07 | — |
| (50%Imax) 2747.59 | — |
| (60%Imax) 3297.11 | — |
| (70%Imax) 3846.63 | — |
| (80%Imax) 4396.14 | — |
| (90%Imax) 4945.66 | — |



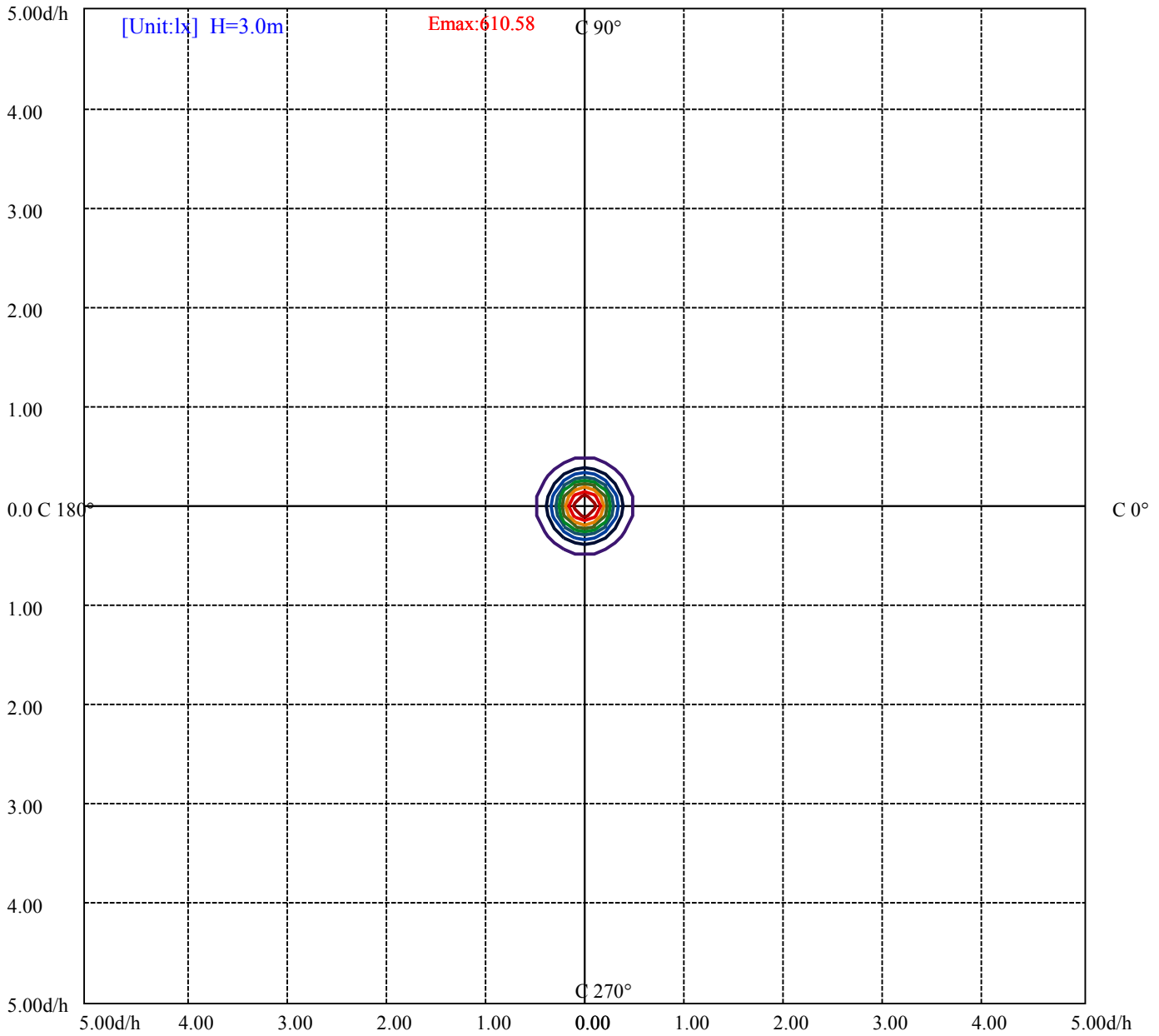
House

[Unit:cd]

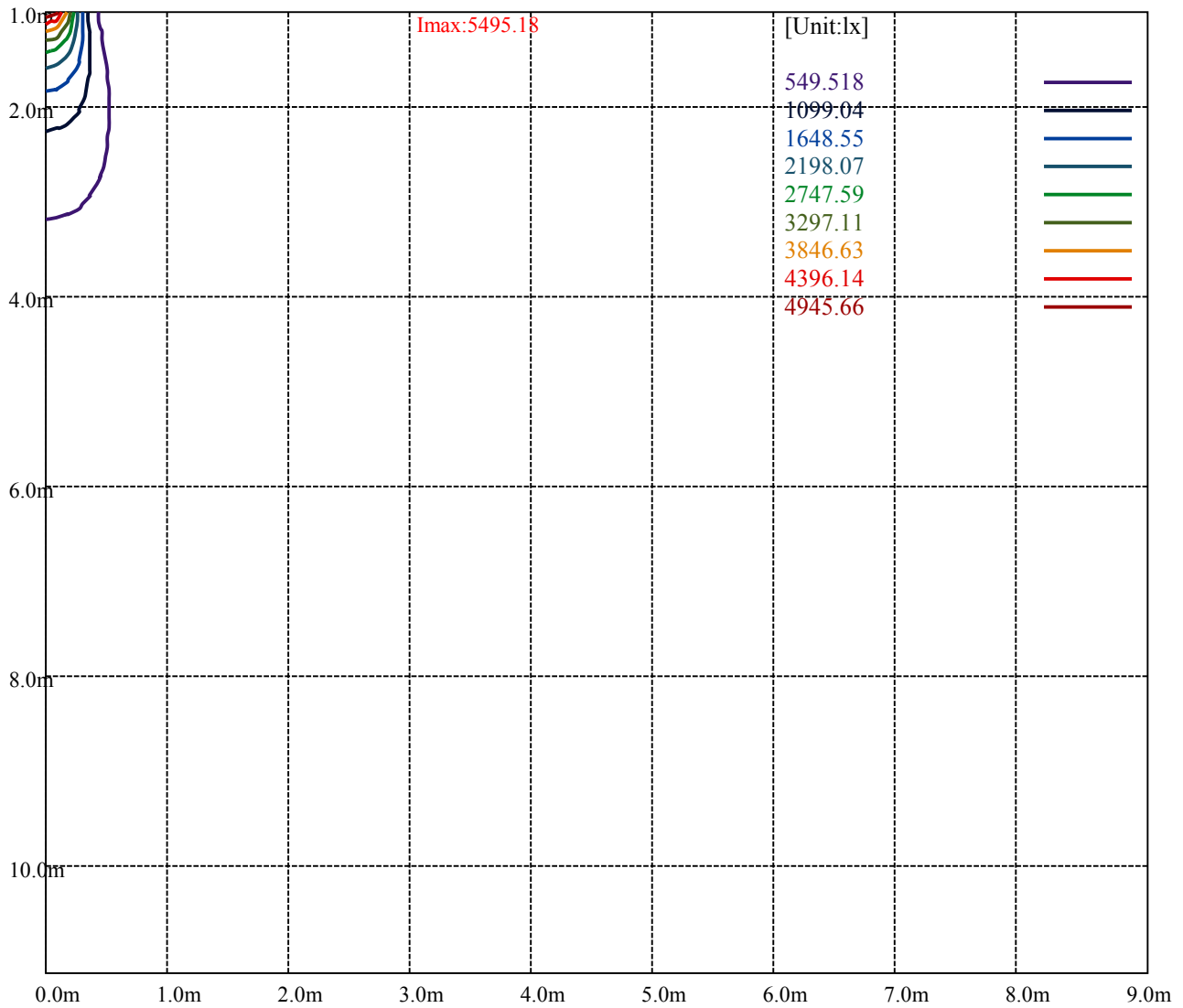
Road

Imax:5495.18

| | |
|-------------------|---|
| (10%Imax) 549.518 | — |
| (20%Imax) 1099.04 | — |
| (30%Imax) 1648.55 | — |
| (40%Imax) 2198.07 | — |
| (50%Imax) 2747.59 | — |
| (60%Imax) 3297.11 | — |
| (70%Imax) 3846.63 | — |
| (80%Imax) 4396.14 | — |
| (90%Imax) 4945.66 | — |



- (10%Emax) 61.05745
- (20%Emax) 122.1144
- (30%Emax) 183.1722
- (40%Emax) 244.23
- (50%Emax) 305.2878
- (60%Emax) 366.3445
- (70%Emax) 427.4022
- (80%Emax) 488.46
- (90%Emax) 549.5178



Luminance Table

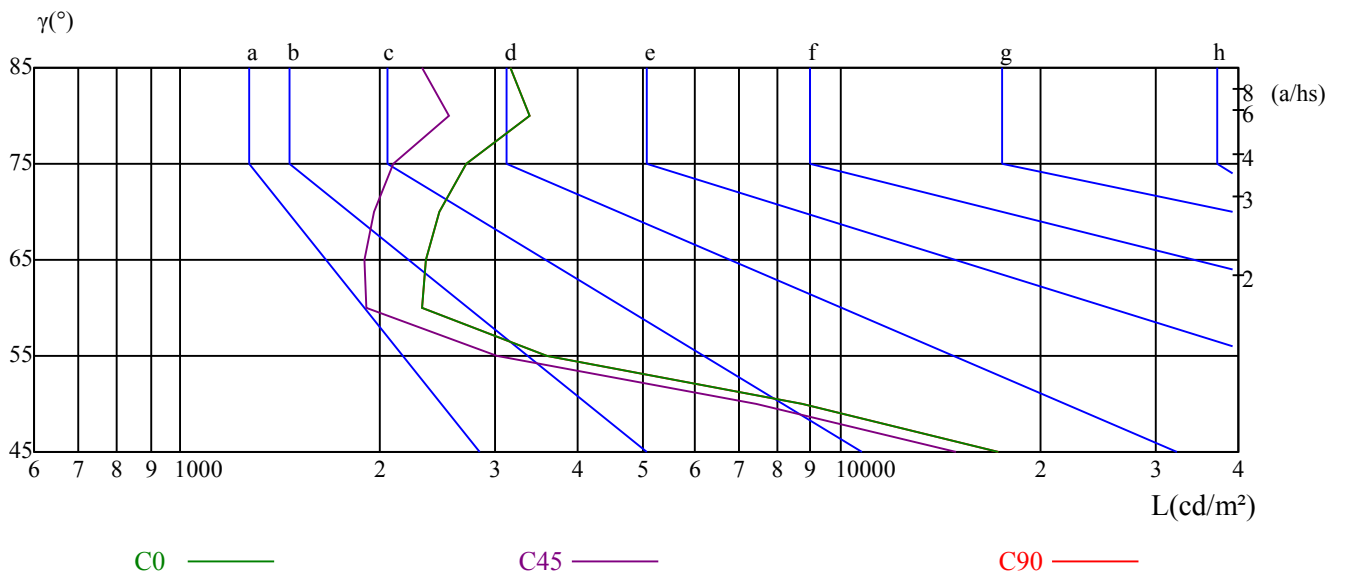
| γ | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 |
|----------|-------|------|------|------|------|------|------|------|------|
| C0 | 17338 | 8768 | 3599 | 2319 | 2355 | 2473 | 2704 | 3377 | 3158 |
| C45 | 14948 | 7447 | 3009 | 1907 | 1903 | 1959 | 2095 | 2552 | 2316 |
| C90 | 17338 | 8768 | 3599 | 2319 | 2355 | 2473 | 2704 | 3377 | 3158 |

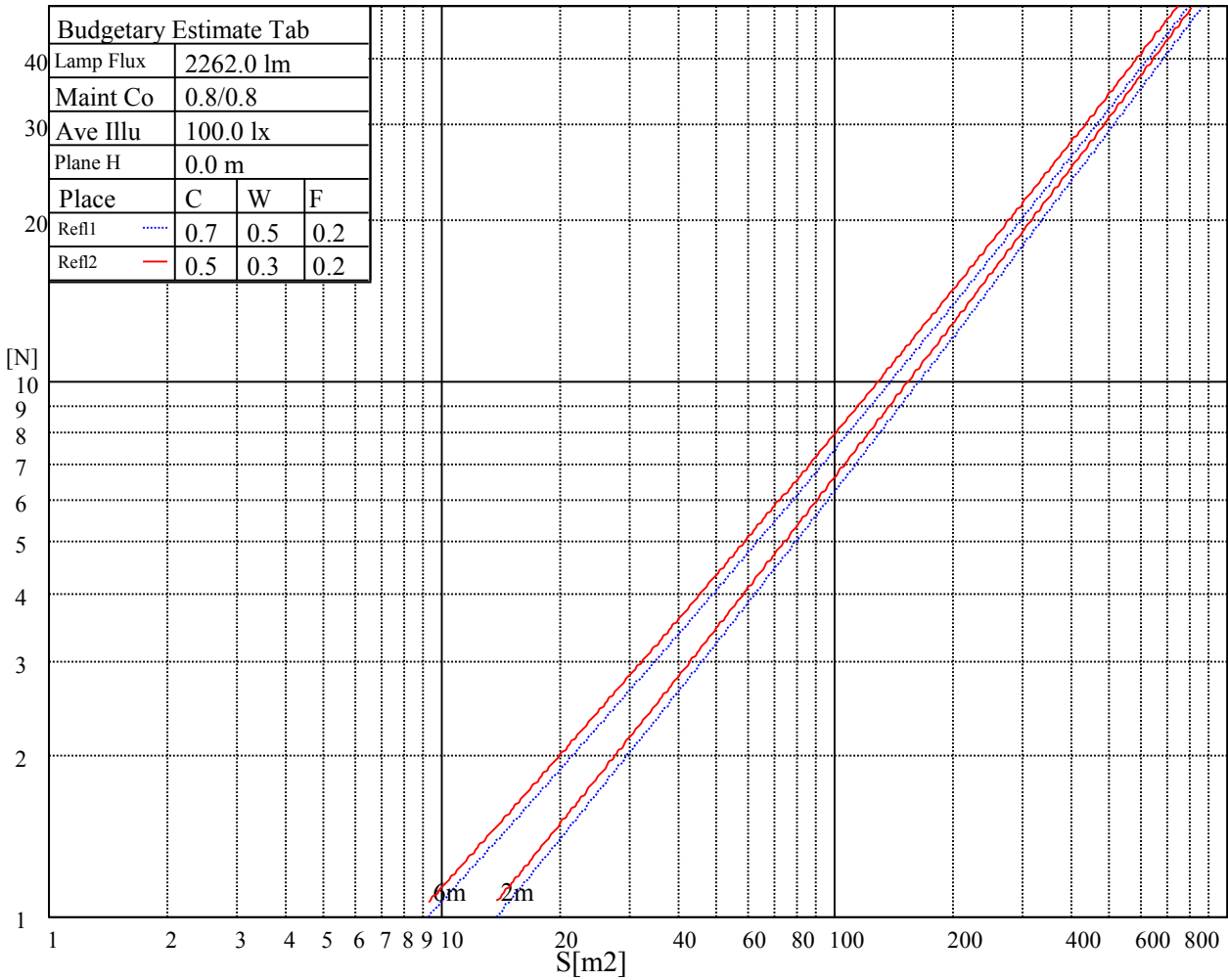
| L(Hor)(65) | L(Ver)(65) | L45(65) | L(Hor)(75) | L(Ver)(75) | L45(75) | L(Hor)(85) | L(Ver)(85) | L45(85) |
|------------|------------|---------|------------|------------|---------|------------|------------|---------|
| 5530 | 5530 | 5530 | 9046 | 9046 | 9046 | 25848 | 25848 | 25848 |

Glare Table

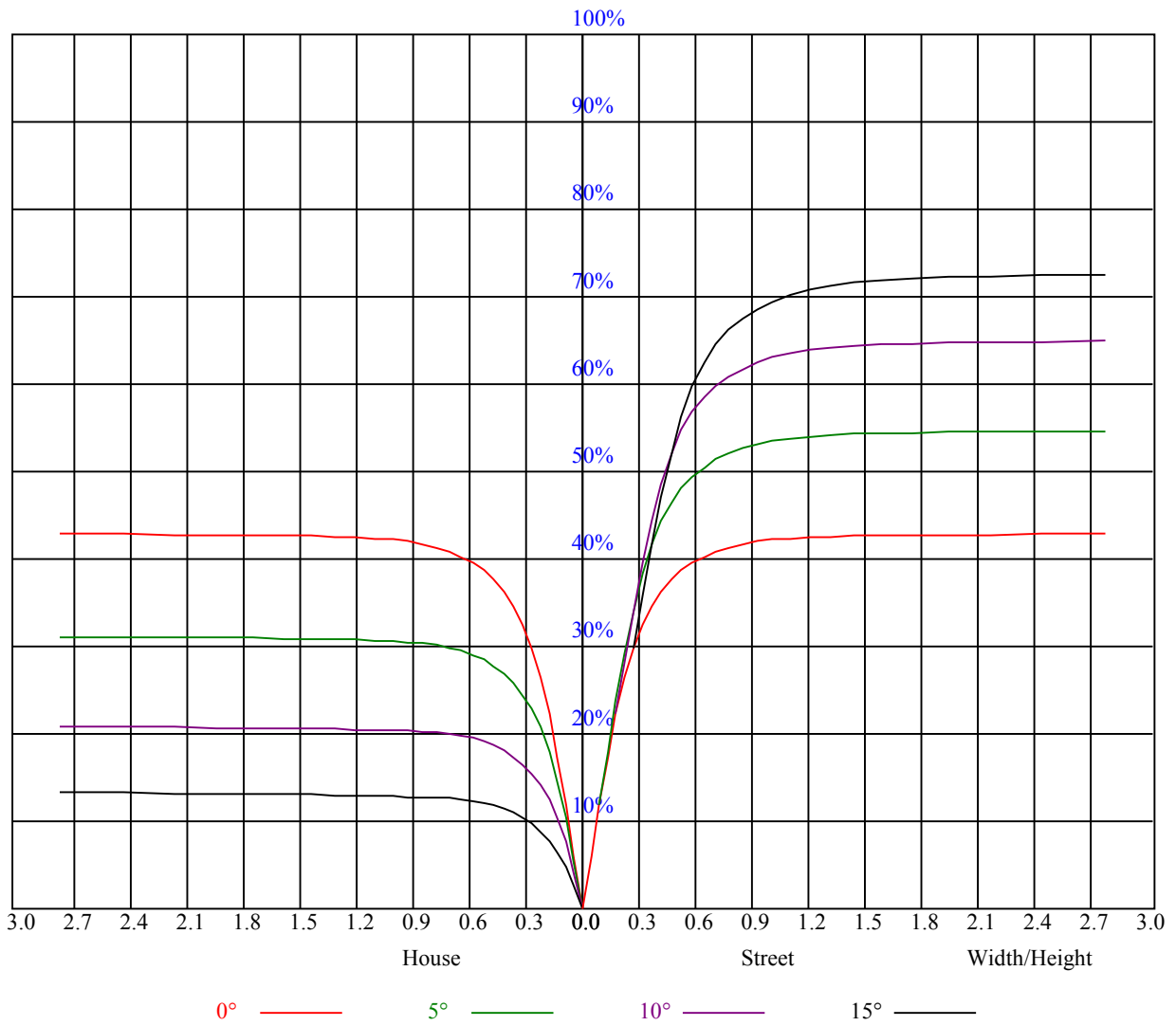
| Glare | Quality | Service Values Illuminance(lx) | | | | | | | |
|-------|---------|--------------------------------|------|------|-------|-------|-------|-------|-------|
| 1.15 | A | 2000 | 1000 | 500 | <=300 | | | | |
| 1.5 | B | | 2000 | 1000 | 500 | <=300 | | | |
| 1.85 | C | | | 2000 | 1000 |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

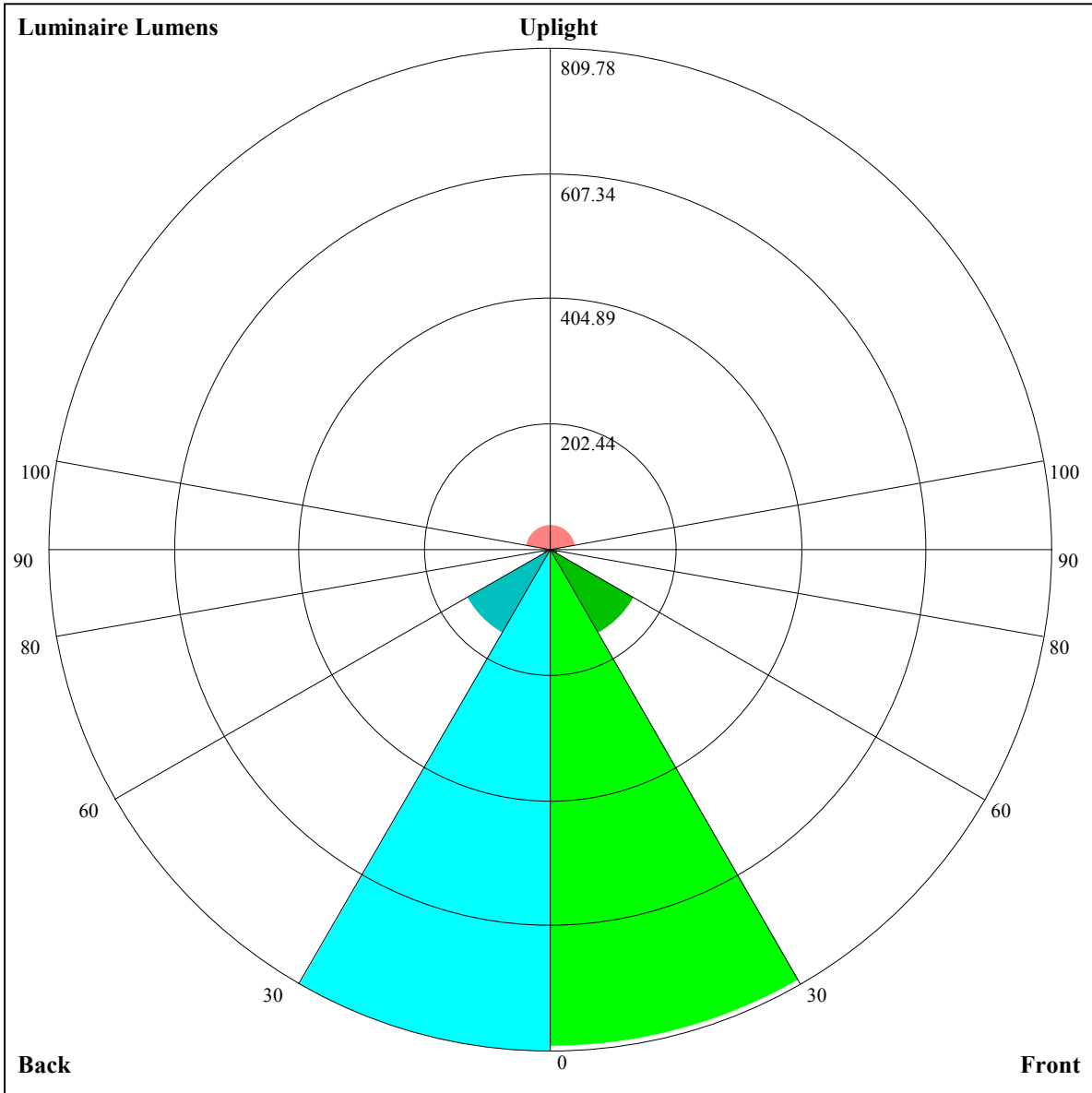
Luminance Limiting Curve





| 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 | 1.04 | 1.04 | 1.04 | 1.02 | 1.02 | 1.02 | 0.97 | 0.97 | 0.97 | 0.93 | 0.93 | 0.93 | 0.89 | 0.89 | 0.89 | 0.87 |
| 1 | 0.96 | 0.94 | 0.92 | 0.94 | 0.92 | 0.90 | 0.91 | 0.89 | 0.87 | 0.87 | 0.86 | 0.85 | 0.84 | 0.83 | 0.82 | 0.81 |
| 2 | 0.91 | 0.87 | 0.85 | 0.89 | 0.86 | 0.84 | 0.87 | 0.84 | 0.82 | 0.84 | 0.82 | 0.80 | 0.82 | 0.80 | 0.78 | 0.77 |
| 3 | 0.86 | 0.82 | 0.79 | 0.85 | 0.82 | 0.79 | 0.83 | 0.80 | 0.77 | 0.81 | 0.78 | 0.76 | 0.79 | 0.77 | 0.75 | 0.74 |
| 4 | 0.82 | 0.78 | 0.75 | 0.81 | 0.78 | 0.75 | 0.80 | 0.76 | 0.74 | 0.78 | 0.75 | 0.73 | 0.76 | 0.74 | 0.72 | 0.71 |
| 5 | 0.79 | 0.75 | 0.72 | 0.78 | 0.74 | 0.71 | 0.77 | 0.73 | 0.71 | 0.75 | 0.72 | 0.70 | 0.74 | 0.71 | 0.69 | 0.68 |
| 6 | 0.76 | 0.72 | 0.68 | 0.75 | 0.71 | 0.68 | 0.74 | 0.70 | 0.68 | 0.73 | 0.70 | 0.67 | 0.72 | 0.69 | 0.67 | 0.66 |
| 7 | 0.73 | 0.69 | 0.66 | 0.72 | 0.68 | 0.66 | 0.71 | 0.68 | 0.65 | 0.71 | 0.67 | 0.65 | 0.70 | 0.67 | 0.65 | 0.64 |
| 8 | 0.70 | 0.66 | 0.63 | 0.70 | 0.66 | 0.63 | 0.69 | 0.66 | 0.63 | 0.68 | 0.65 | 0.63 | 0.68 | 0.65 | 0.63 | 0.62 |
| 9 | 0.68 | 0.64 | 0.61 | 0.68 | 0.64 | 0.61 | 0.67 | 0.64 | 0.61 | 0.66 | 0.63 | 0.61 | 0.66 | 0.63 | 0.61 | 0.60 |
| 10 | 0.66 | 0.62 | 0.59 | 0.66 | 0.62 | 0.59 | 0.65 | 0.62 | 0.59 | 0.65 | 0.61 | 0.59 | 0.64 | 0.61 | 0.59 | 0.58 |





Luminaire Lumens:

FL=803.03,FM=155.21,FH=12,FVH=5.86

BL=809.78,BM=156.11,BH=11.93,BVH=5.82

UL=8.53,UH=40.59

BUG Rating:B2-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 | 5495.18 | 5339.92 | 4522.33 | 3006.08 | 1539.38 | 746.01 | 515.88 | 341.35 | 197.27 |
| 45.0 | 5500.13 | 5197.32 | 4176.58 | 2489.65 | 1199.13 | 661.23 | 454.77 | 291.80 | 169.08 |
| 90.0 | 5488.02 | 5125.20 | 3820.36 | 2207.21 | 1037.04 | 609.20 | 425.20 | 262.73 | 145.40 |
| 135.0 | 5497.38 | 5287.07 | 4352.21 | 2686.20 | 1382.47 | 694.26 | 474.59 | 312.72 | 180.25 |
| 180.0 | 5495.18 | 5263.94 | 4318.62 | 2682.90 | 1068.04 | 693.82 | 469.63 | 303.42 | 181.41 |
| 225.0 | 5500.13 | 5386.17 | 4719.43 | 3173.45 | 1668.21 | 792.10 | 536.52 | 349.72 | 202.06 |
| 270.0 | 5488.02 | 5418.65 | 4869.74 | 3445.43 | 1975.97 | 898.52 | 563.78 | 376.04 | 284.64 |
| 315.0 | 5497.38 | 5336.62 | 4476.09 | 2874.49 | 1323.01 | 740.23 | 500.41 | 332.87 | 195.51 |
| 360.0 | 5495.18 | 5339.92 | 4522.33 | 3006.08 | 1539.38 | 746.01 | 515.88 | 341.35 | 197.27 |
| C/γ(°) | 45.0 | 50.0 | 55.0 | 60.0 | 65.0 | 70.0 | 75.0 | 80.0 | 85.0 |
| 0.0 | 105.76 | 51.70 | 19.99 | 11.84 | 11.40 | 11.23 | 10.74 | 10.74 | 11.07 |
| 45.0 | 84.73 | 40.08 | 14.76 | 11.67 | 11.40 | 11.29 | 13.43 | 18.61 | 11.18 |
| 90.0 | 68.99 | 34.69 | 13.49 | 11.62 | 11.40 | 11.29 | 11.23 | 10.90 | 10.30 |
| 135.0 | 91.89 | 46.91 | 17.56 | 11.84 | 11.62 | 11.45 | 11.45 | 13.49 | 11.45 |
| 180.0 | 92.49 | 45.81 | 16.96 | 11.78 | 11.51 | 11.34 | 11.23 | 13.98 | 11.62 |
| 225.0 | 111.93 | 55.55 | 23.12 | 12.11 | 11.51 | 11.34 | 11.23 | 10.96 | 10.57 |
| 270.0 | 126.63 | 63.20 | 27.80 | 12.39 | 11.45 | 11.23 | 11.18 | 15.20 | 11.07 |
| 315.0 | 100.26 | 48.50 | 19.88 | 11.67 | 11.34 | 11.23 | 11.29 | 11.07 | 11.07 |
| 360.0 | 105.76 | 51.70 | 19.99 | 11.84 | 11.40 | 11.23 | 10.74 | 10.74 | 11.07 |
| C/γ(°) | 90.0 | | | | | | | | |
| 0.0 | 7.82 | | | | | | | | |
| 45.0 | 7.76 | | | | | | | | |
| 90.0 | 7.82 | | | | | | | | |
| 135.0 | 7.82 | | | | | | | | |
| 180.0 | 7.82 | | | | | | | | |
| 225.0 | 7.76 | | | | | | | | |
| 270.0 | 7.87 | | | | | | | | |
| 315.0 | 7.87 | | | | | | | | |
| 360.0 | 7.82 | | | | | | | | |