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## Nata

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### Client:

LumCAT: 1405-N

Luminaire: 92.70.064.00

Report No: GC2019091909

Test No: NATA07

LampCAT: TRIDONIC SLE G7 9MM

Lamp flux(lm): 1011.0

Number of Lamps: 1

Length(mm): 39

Phm Type: C

Voltage(V): 220.5000

Current(A): 0.0410

Power (W): 8.2800

PF: 0.8970

Ballast type: AC

Width(mm): 39

Height(mm): 0

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## Photometric Results

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Lumens(lm): 837.87, Efficiency(%): 82.88% , Luminous Efficacy(lm/W): 101.19

Central intensity(cd): 1927.873, Maximum intensity(cd): 1927.873

Angle of maximum intensity: C=0.0  $\gamma$ =0.0

Beam Angle(50%Imax): [C0/180]Total=23.8

[C90/270]Total=23.8

Field angle(10%Imax): [C0/180]Total=77.2

[C90/270]Total=77.2

Maximum s/h(1/2): C0\_180=0.39 C90\_270=0.39

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(%): 82.88%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 95.458%

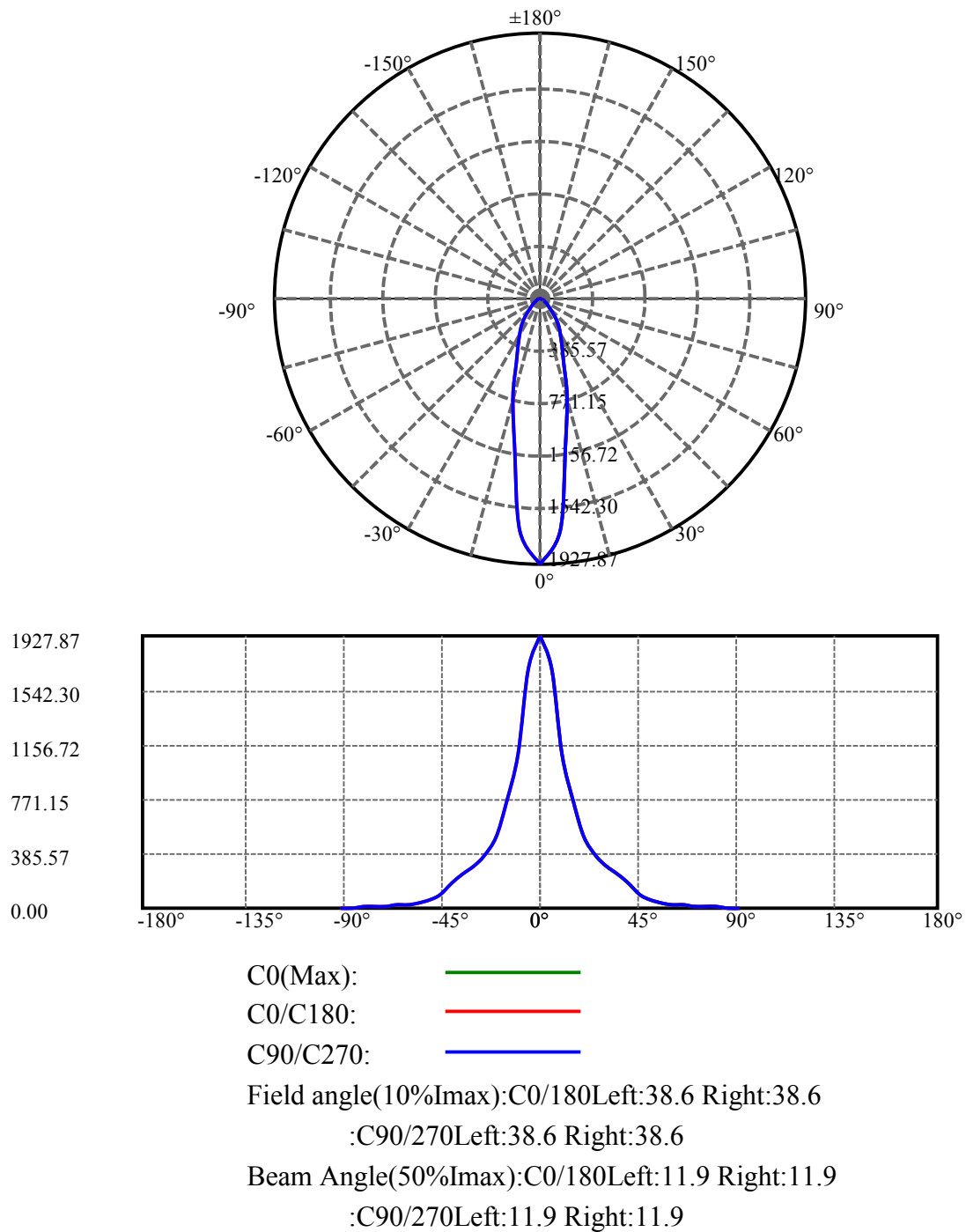
| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 0.0                | 1927.873      | 0.000       | 0         | .000%       | .000%      |
| 5.0                | 1694.174      | 43.301      | 43.301    | 4.283%      | 5.168%     |
| 10.0               | 1095.368      | 99.791      | 143.091   | 9.870%      | 17.078%    |
| 15.0               | 743.637       | 109.089     | 252.18    | 10.790%     | 30.098%    |
| 20.0               | 497.925       | 102.322     | 354.502   | 10.121%     | 42.310%    |
| 25.0               | 375.560       | 91.612      | 446.114   | 9.062%      | 53.244%    |
| 30.0               | 304.418       | 86.052      | 532.166   | 8.512%      | 63.514%    |
| 35.0               | 238.612       | 79.965      | 612.131   | 7.909%      | 73.058%    |
| 40.0               | 174.117       | 68.861      | 680.992   | 6.811%      | 81.277%    |
| 45.0               | 99.210        | 50.609      | 731.6     | 5.006%      | 87.317%    |
| 50.0               | 59.054        | 31.980      | 763.58    | 3.163%      | 91.134%    |
| 55.0               | 38.196        | 21.145      | 784.725   | 2.092%      | 93.657%    |
| 60.0               | 27.065        | 15.085      | 799.81    | 1.492%      | 95.458%    |
| 65.0               | 20.539        | 11.573      | 811.383   | 1.145%      | 96.839%    |
| 70.0               | 15.754        | 9.190       | 820.572   | .909%       | 97.936%    |
| 75.0               | 11.601        | 7.150       | 827.723   | .707%       | 98.789%    |
| 80.0               | 7.802         | 5.192       | 832.914   | .514%       | 99.409%    |
| 85.0               | 4.287         | 3.285       | 836.199   | .325%       | 99.801%    |
| 90.0               | 1.810         | 1.669       | 837.868   | .165%       | 100.000%   |

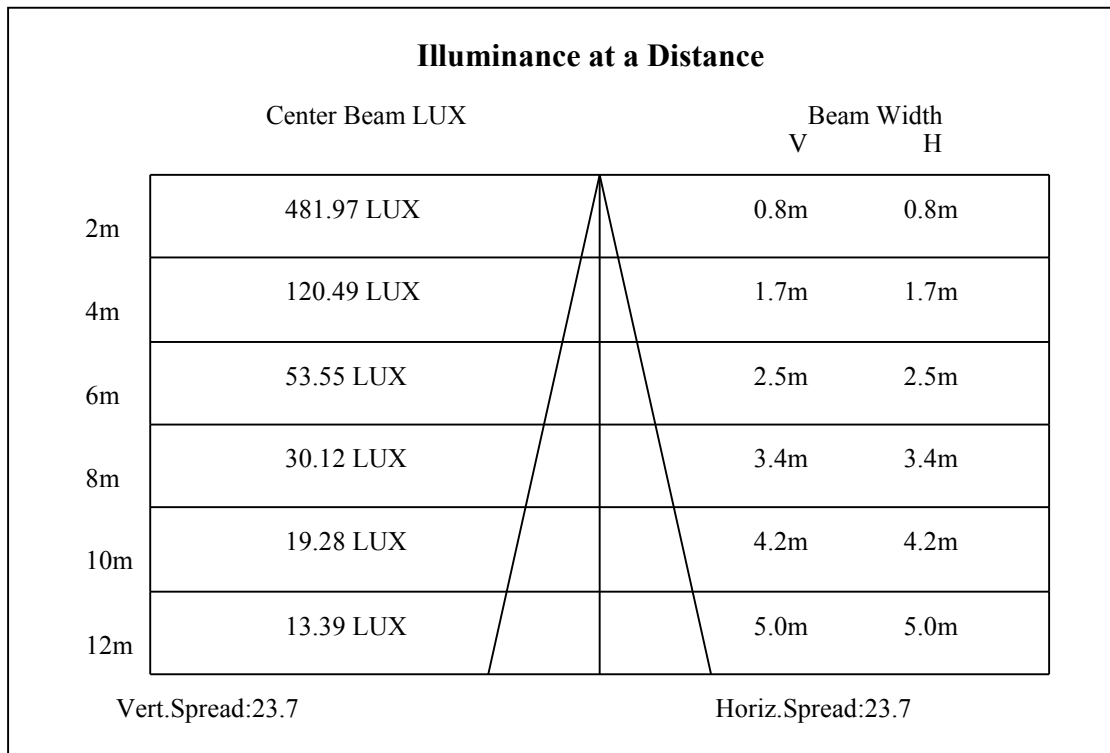
## ZONAL LUMEN SUMMARY

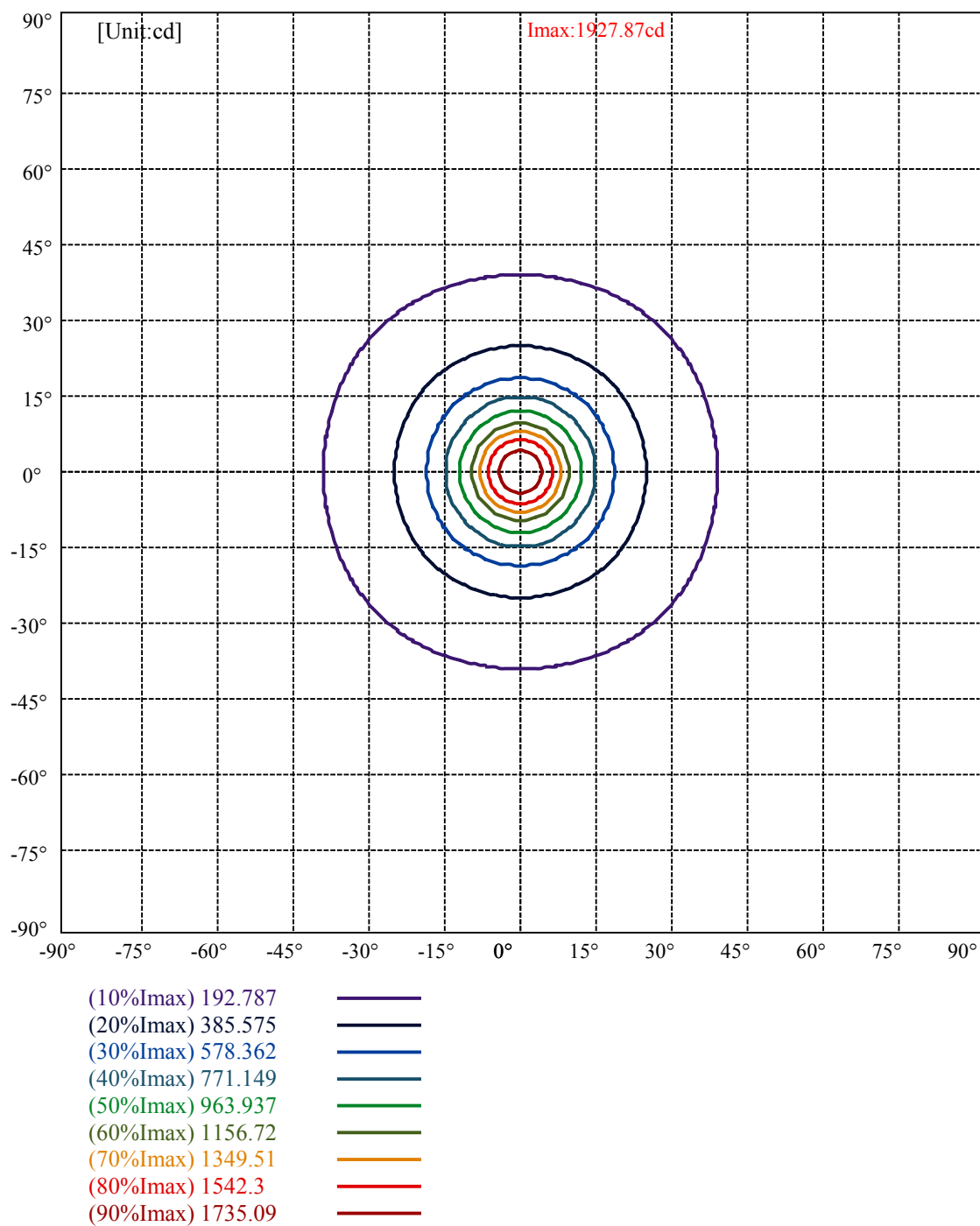
| Zone    | Lumens | %Lamp  | %Fixt   |
|---------|--------|--------|---------|
| 0-30    | 532.17 | 52.64% | 63.51%  |
| 0-40    | 680.99 | 67.36% | 81.28%  |
| 0-60    | 799.81 | 79.11% | 95.46%  |
| 0-90    | 836.20 | 82.71% | 99.80%  |
| 0-120   | 836.20 | 82.71% | 99.80%  |
| 0-180   | 837.87 | 82.88% | 100.00% |
| 60-90   | 51.47  | 5.09%  | 6.14%   |
| 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%   |
| 0-39.22 | 670.29 | 66.30% | 80.00%  |

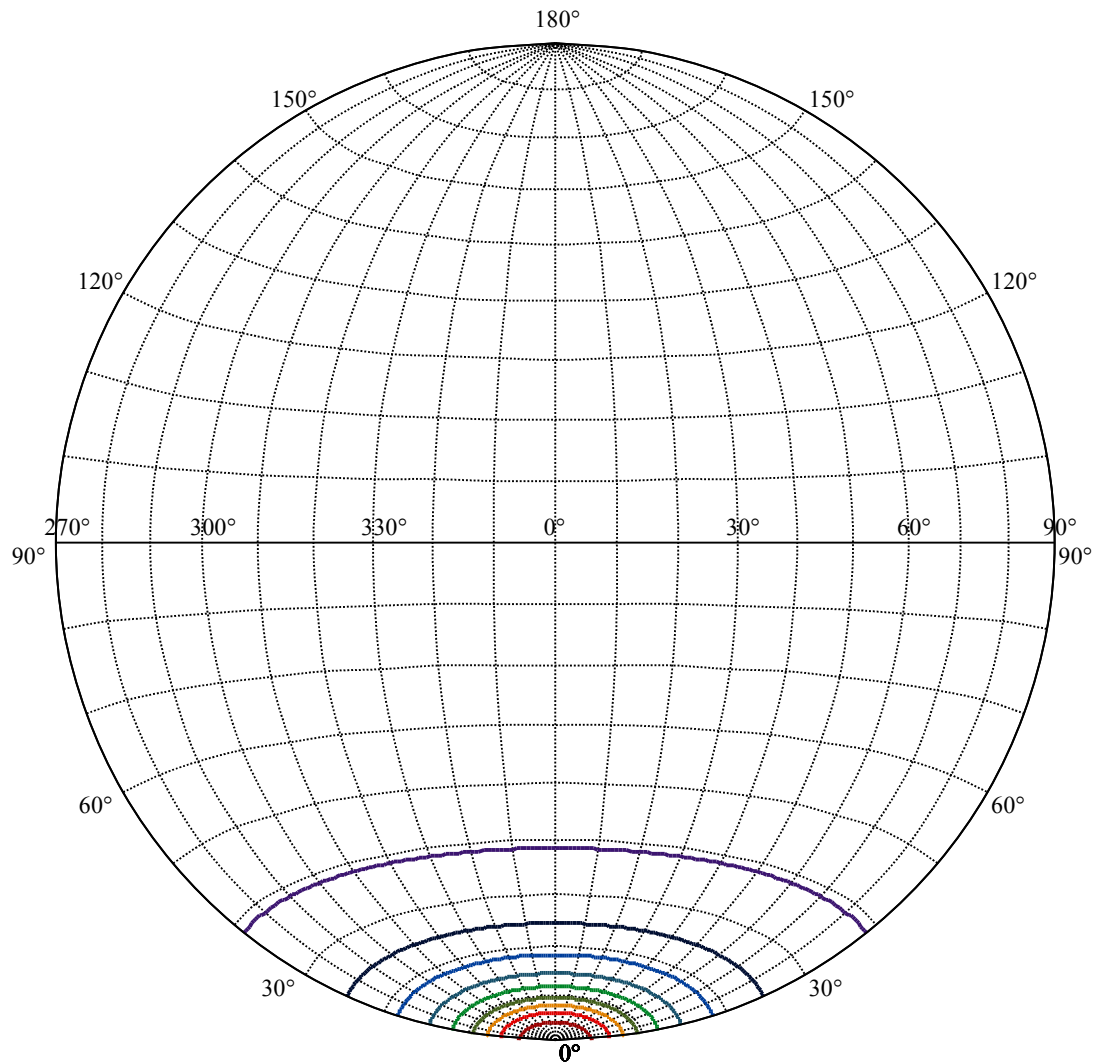
## ZONAL LUMEN SUMMARY

|         |        |
|---------|--------|
| 0-10    | 143.09 |
| 10-20   | 211.41 |
| 20-30   | 177.66 |
| 30-40   | 148.83 |
| 40-50   | 82.59  |
| 50-60   | 36.23  |
| 60-70   | 20.76  |
| 70-80   | 12.34  |
| 80-90   | 3.28   |
| 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   |









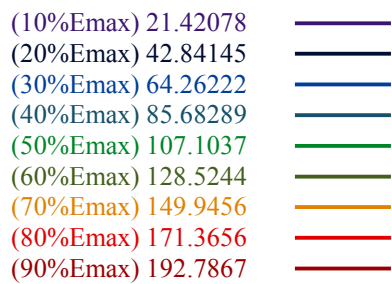
House

[Unit:cd]

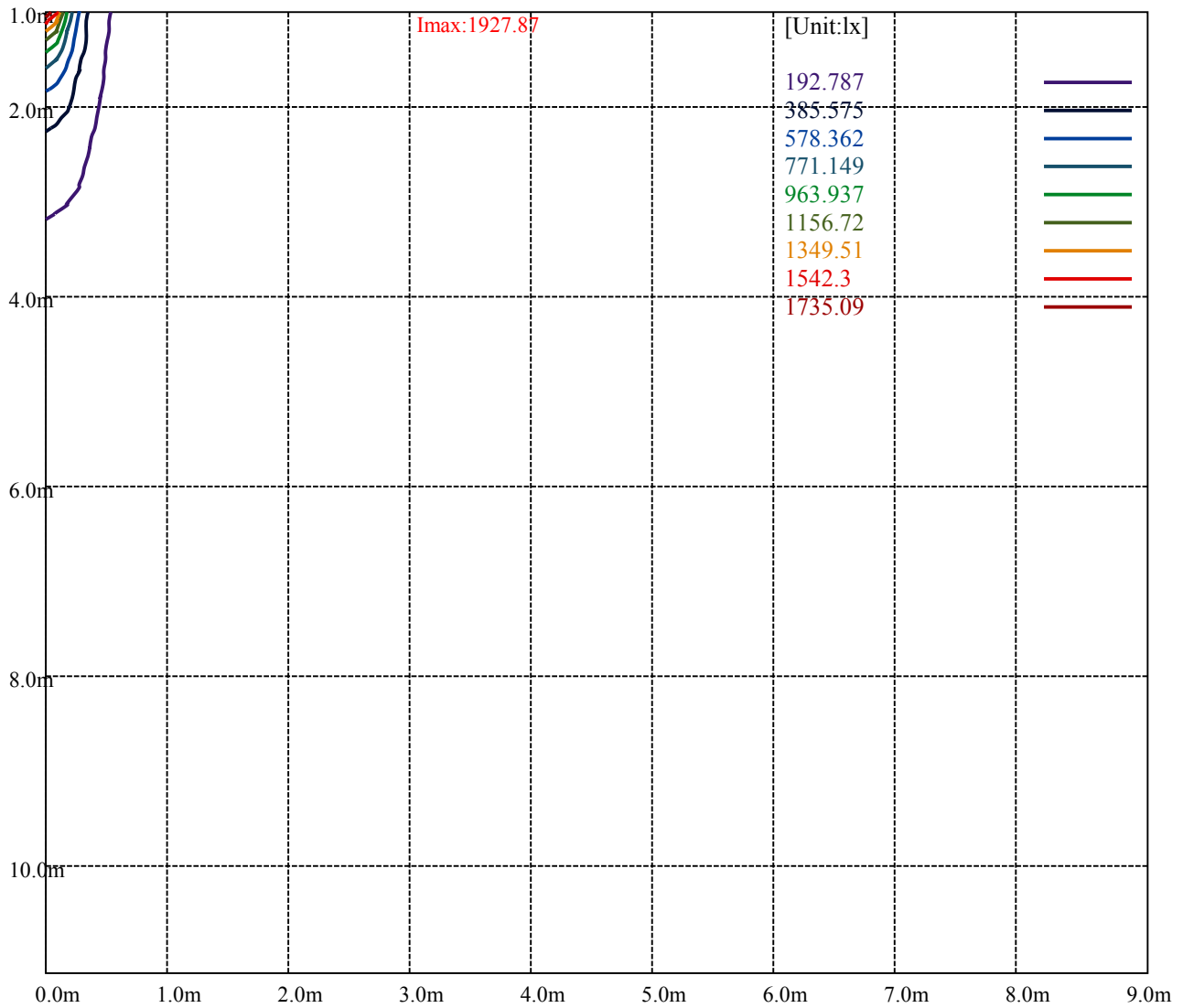
Road

**Imax:1927.87**

|           |         |   |
|-----------|---------|---|
| (10%Imax) | 192.787 | — |
| (20%Imax) | 385.575 | — |
| (30%Imax) | 578.362 | — |
| (40%Imax) | 771.149 | — |
| (50%Imax) | 963.937 | — |
| (60%Imax) | 1156.72 | — |
| (70%Imax) | 1349.51 | — |
| (80%Imax) | 1542.3  | — |
| (90%Imax) | 1735.09 | — |







Luminance Table

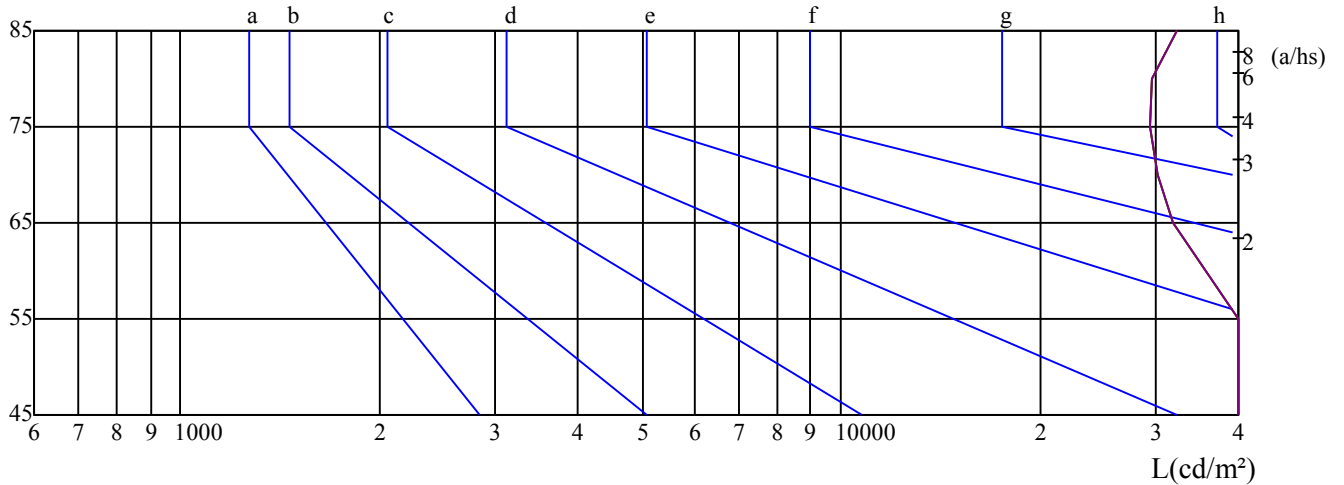
| $\gamma$ | 45    | 50    | 55    | 60    | 65    | 70    | 75    | 80    | 85    |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C0       | 92245 | 60402 | 43782 | 35588 | 31953 | 30284 | 29469 | 29538 | 32335 |
| C45      | 92245 | 60402 | 43782 | 35588 | 31953 | 30284 | 29469 | 29538 | 32335 |
| C90      | 92245 | 60402 | 43782 | 35588 | 31953 | 30284 | 29469 | 29538 | 32335 |

| L(Hor)(65) | L(Ver)(65) | L45(65) | L(Hor)(75) | L(Ver)(75) | L45(75) | L(Hor)(85) | L(Ver)(85) | L45(85) |
|------------|------------|---------|------------|------------|---------|------------|------------|---------|
| 31953      | 31953      | 31953   | 29469      | 29469      | 29469   | 32335      | 32335      | 32335   |

Glare Table

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

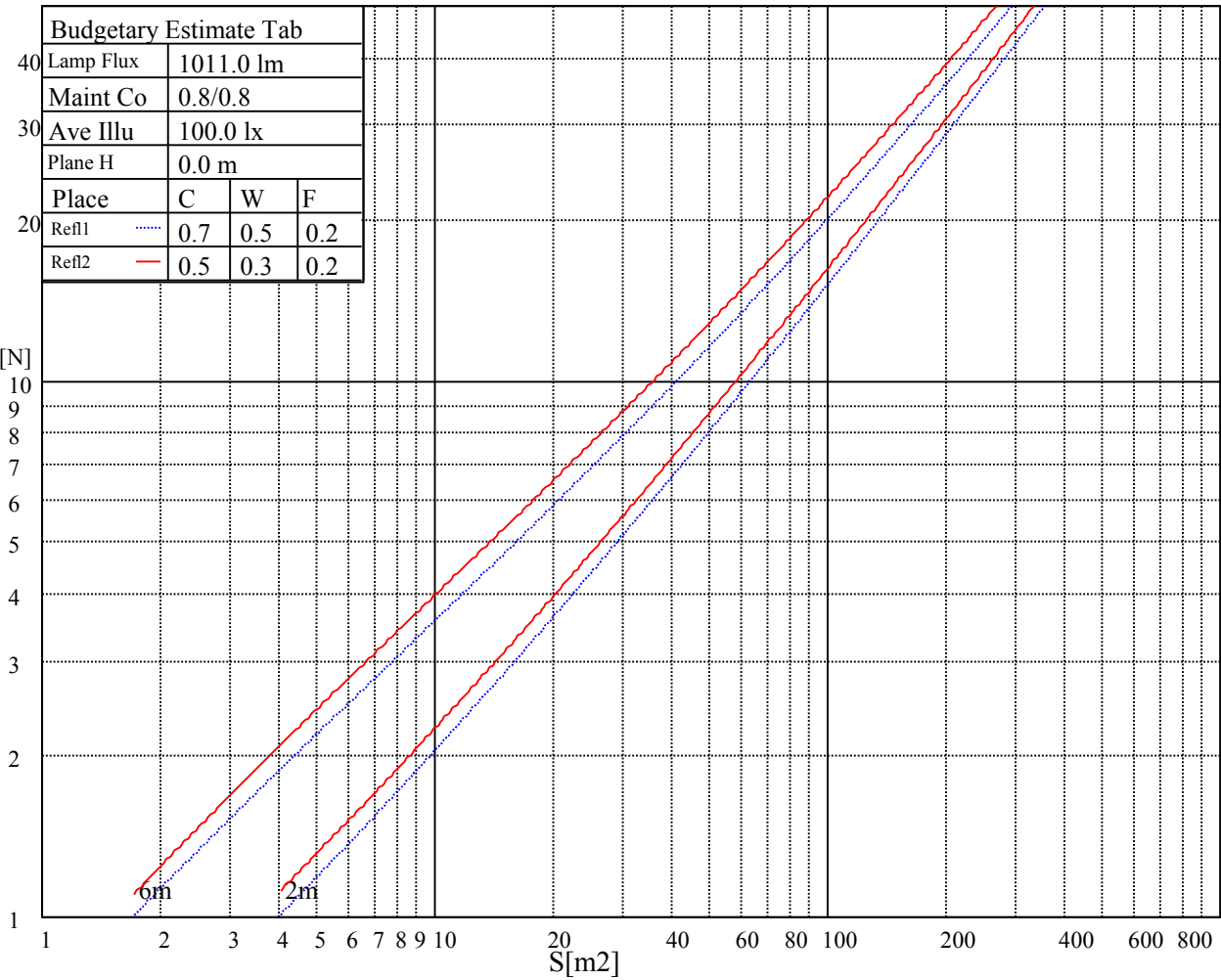
Luminance Limiting Curve

 $\gamma(^{\circ})$ 

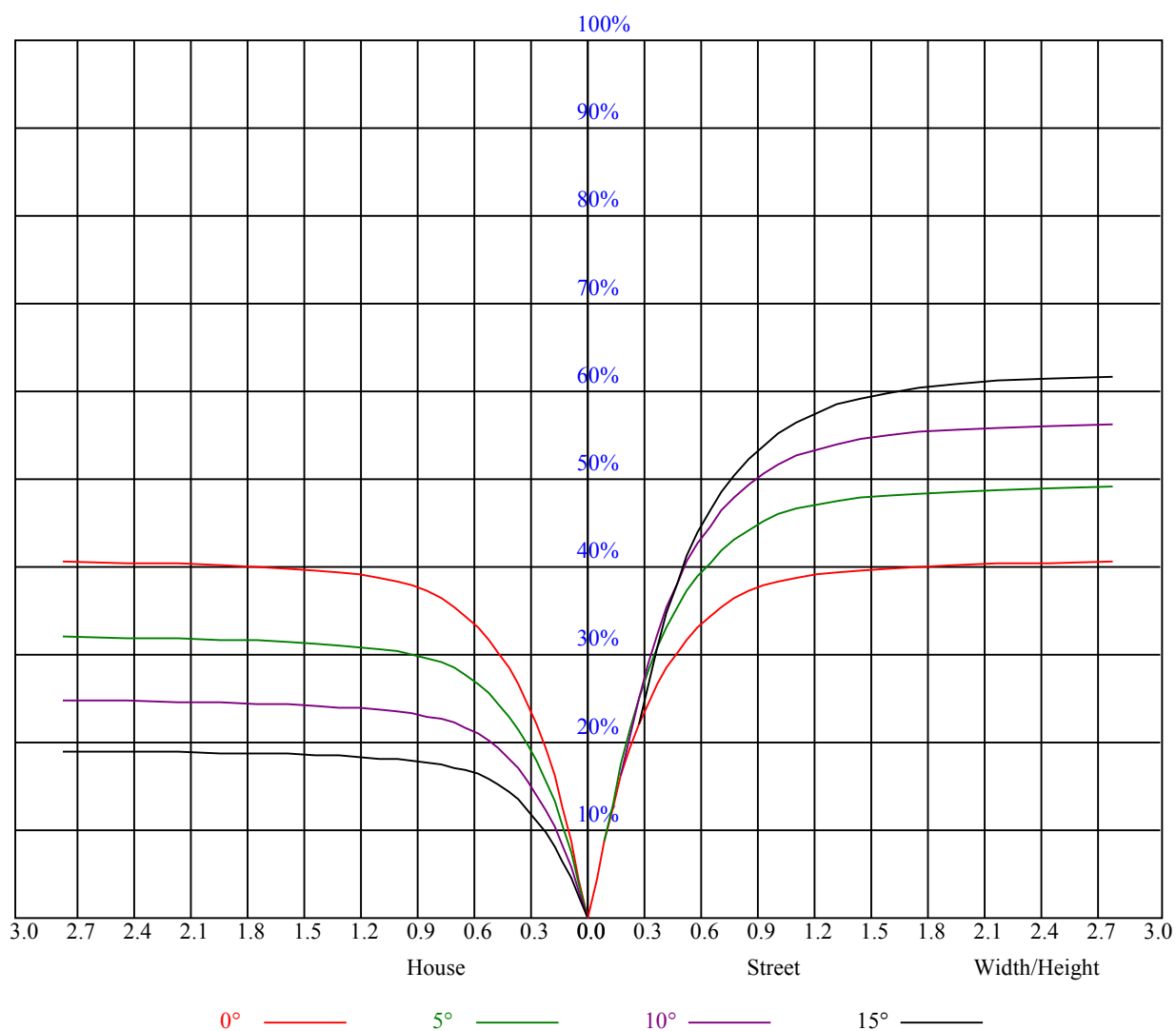
C0 ———

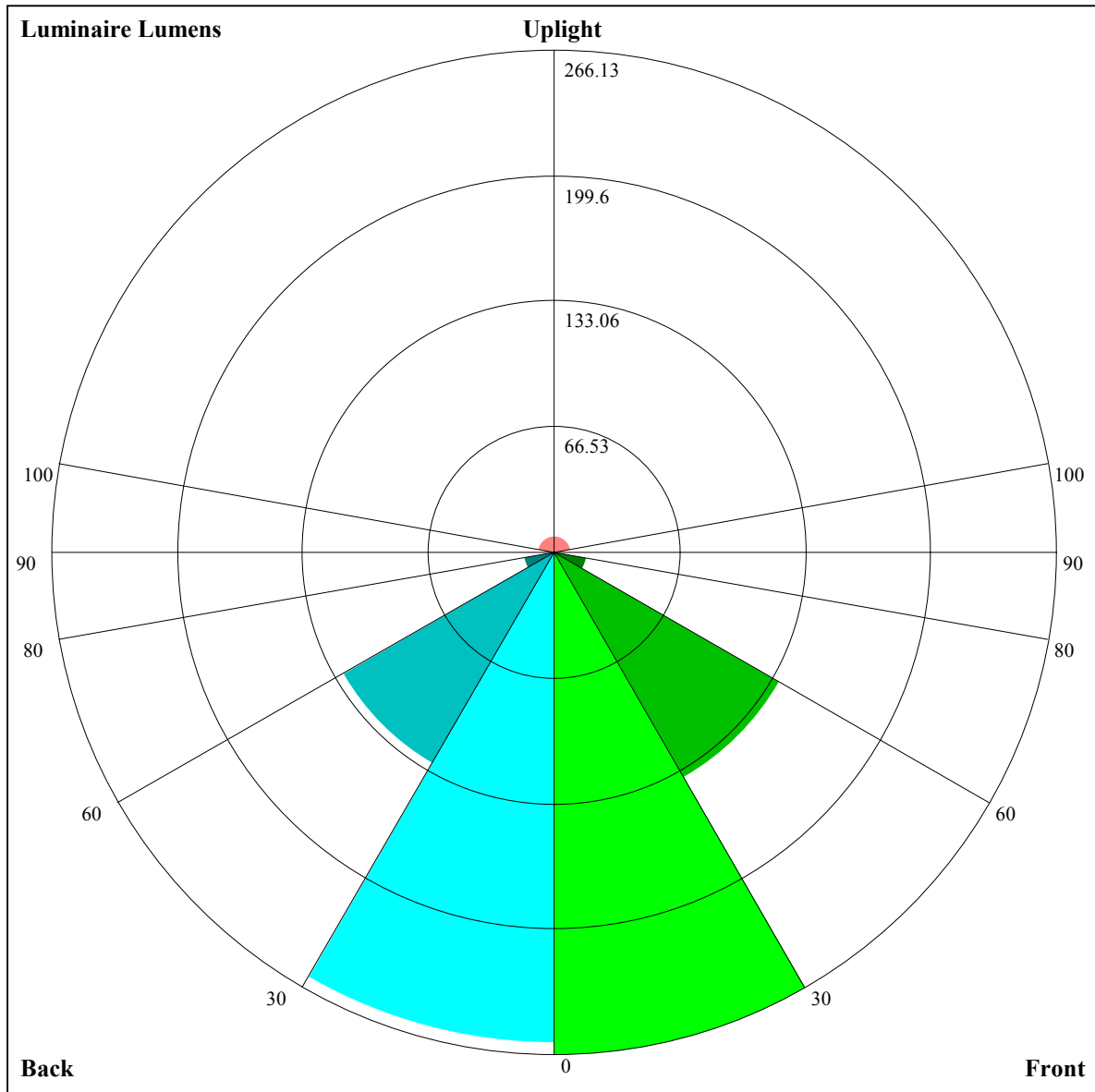
C45 ———

C90 ———



| 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 | 0.96 | 0.96 | 0.96 | 0.92 | 0.92 | 0.92 | 0.88 | 0.88 | 0.88 | 0.85 | 0.85 | 0.85 | 0.83 |
| 1     | 0.91                                    | 0.89 | 0.87 | 0.89 | 0.87 | 0.85 | 0.86 | 0.84 | 0.83 | 0.83 | 0.81 | 0.80 | 0.80 | 0.79 | 0.78 | 0.76 |
| 2     | 0.84                                    | 0.80 | 0.77 | 0.82 | 0.79 | 0.76 | 0.80 | 0.77 | 0.75 | 0.77 | 0.75 | 0.73 | 0.75 | 0.73 | 0.71 | 0.70 |
| 3     | 0.78                                    | 0.73 | 0.70 | 0.77 | 0.73 | 0.69 | 0.74 | 0.71 | 0.68 | 0.72 | 0.69 | 0.67 | 0.71 | 0.68 | 0.66 | 0.65 |
| 4     | 0.72                                    | 0.68 | 0.64 | 0.72 | 0.67 | 0.63 | 0.70 | 0.66 | 0.63 | 0.68 | 0.65 | 0.62 | 0.66 | 0.64 | 0.61 | 0.60 |
| 5     | 0.68                                    | 0.63 | 0.59 | 0.67 | 0.62 | 0.59 | 0.65 | 0.61 | 0.58 | 0.64 | 0.60 | 0.58 | 0.63 | 0.60 | 0.57 | 0.56 |
| 6     | 0.64                                    | 0.58 | 0.55 | 0.63 | 0.58 | 0.55 | 0.62 | 0.57 | 0.54 | 0.61 | 0.57 | 0.54 | 0.59 | 0.56 | 0.53 | 0.52 |
| 7     | 0.60                                    | 0.55 | 0.51 | 0.59 | 0.55 | 0.51 | 0.58 | 0.54 | 0.51 | 0.57 | 0.53 | 0.51 | 0.56 | 0.53 | 0.50 | 0.49 |
| 8     | 0.57                                    | 0.52 | 0.48 | 0.56 | 0.51 | 0.48 | 0.55 | 0.51 | 0.48 | 0.54 | 0.50 | 0.48 | 0.54 | 0.50 | 0.47 | 0.46 |
| 9     | 0.54                                    | 0.49 | 0.45 | 0.53 | 0.49 | 0.45 | 0.53 | 0.48 | 0.45 | 0.52 | 0.48 | 0.45 | 0.51 | 0.48 | 0.45 | 0.44 |
| 10    | 0.51                                    | 0.46 | 0.43 | 0.51 | 0.46 | 0.43 | 0.50 | 0.46 | 0.43 | 0.49 | 0.45 | 0.43 | 0.49 | 0.45 | 0.43 | 0.42 |





Luminaire Lumens:

FL=266.13,FM=138.2,FH=16.94,FVH=2.61

BL=259.88,BM=129.7,BH=16.15,BVH=2.35

UL=1.97,UH=9.4

BUG Rating:B1-U1-G0

Nata 1405-N

| Intensity data(cd) |         |         |         |        |        |        |        |        |        | Appendix Page: 15 Total:15 |  |
|--------------------|---------|---------|---------|--------|--------|--------|--------|--------|--------|----------------------------|--|
| C/γ(°)             | 0.0     | 5.0     | 10.0    | 15.0   | 20.0   | 25.0   | 30.0   | 35.0   | 40.0   |                            |  |
| 0.0                | 1956.41 | 1711.87 | 886.91  | 691.41 | 460.55 | 355.40 | 300.09 | 236.33 | 173.36 |                            |  |
| 45.0               | 1887.73 | 1907.69 | 1538.78 | 933.22 | 603.75 | 421.39 | 333.22 | 265.94 | 239.49 |                            |  |
| 90.0               | 1936.92 | 1675.21 | 889.64  | 738.79 | 501.99 | 383.29 | 303.85 | 234.34 | 167.56 |                            |  |
| 135.0              | 1930.43 | 1764.77 | 1241.80 | 809.78 | 540.65 | 394.47 | 315.13 | 251.55 | 178.47 |                            |  |
| 180.0              | 1956.41 | 1664.07 | 1152.24 | 765.70 | 489.14 | 385.19 | 312.34 | 236.70 | 161.16 |                            |  |
| 225.0              | 1887.73 | 1410.71 | 920.27  | 585.01 | 416.42 | 325.01 | 263.01 | 200.56 | 119.35 |                            |  |
| 270.0              | 1936.92 | 1760.59 | 1274.75 | 774.52 | 509.09 | 377.31 | 310.48 | 252.48 | 201.39 |                            |  |
| 315.0              | 1930.43 | 1658.50 | 858.55  | 650.67 | 461.81 | 362.41 | 297.21 | 231.00 | 152.16 |                            |  |
| 360.0              | 1956.41 | 1711.87 | 886.91  | 691.41 | 460.55 | 355.40 | 300.09 | 236.33 | 173.36 |                            |  |
| C/γ(°)             | 45.0    | 50.0    | 55.0    | 60.0   | 65.0   | 70.0   | 75.0   | 80.0   | 85.0   |                            |  |
| 0.0                | 105.71  | 58.79   | 37.59   | 26.87  | 20.23  | 15.64  | 11.88  | 7.75   | 4.78   |                            |  |
| 45.0               | 129.60  | 74.66   | 46.54   | 32.85  | 23.48  | 18.47  | 13.87  | 9.42   | 5.48   |                            |  |
| 90.0               | 95.82   | 60.42   | 39.21   | 27.15  | 20.60  | 15.78  | 11.32  | 7.70   | 4.50   |                            |  |
| 135.0              | 104.36  | 65.85   | 42.04   | 28.63  | 21.58  | 16.19  | 12.06  | 8.35   | 4.41   |                            |  |
| 180.0              | 98.51   | 59.16   | 37.03   | 26.59  | 20.60  | 14.94  | 11.37  | 7.70   | 3.71   |                            |  |
| 225.0              | 73.27   | 45.06   | 30.25   | 22.97  | 17.82  | 13.83  | 9.37   | 6.22   | 3.06   |                            |  |
| 270.0              | 102.41  | 58.79   | 38.61   | 26.03  | 20.56  | 16.10  | 12.11  | 8.03   | 4.22   |                            |  |
| 315.0              | 83.99   | 49.70   | 34.29   | 25.43  | 19.44  | 15.08  | 10.81  | 7.24   | 4.13   |                            |  |
| 360.0              | 105.71  | 58.79   | 37.59   | 26.87  | 20.23  | 15.64  | 11.88  | 7.75   | 4.78   |                            |  |
| C/γ(°)             | 90.0    |         |         |        |        |        |        |        |        |                            |  |
| 0.0                | 2.13    |         |         |        |        |        |        |        |        |                            |  |
| 45.0               | 2.18    |         |         |        |        |        |        |        |        |                            |  |
| 90.0               | 1.76    |         |         |        |        |        |        |        |        |                            |  |
| 135.0              | 1.86    |         |         |        |        |        |        |        |        |                            |  |
| 180.0              | 1.53    |         |         |        |        |        |        |        |        |                            |  |
| 225.0              | 1.58    |         |         |        |        |        |        |        |        |                            |  |
| 270.0              | 1.67    |         |         |        |        |        |        |        |        |                            |  |
| 315.0              | 1.76    |         |         |        |        |        |        |        |        |                            |  |
| 360.0              | 2.13    |         |         |        |        |        |        |        |        |                            |  |