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## Nata

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LumCAT: 1-0922-M  
Luminaire: 92.70.125.00  
Report No: NATA0100  
Test No: GC2020021909  
LampCAT: LUMILEDS LUXEON COB 1202SP  
Lamp flux(lm): 1310.0  
Number of Lamps: 1  
Length(mm): 30  
Phm Type: C

Voltage(V): 37.3200  
Current(A): 0.3000  
Power (W): 11.2080  
PF: 0.0000  
Ballast type: DC  
Width(mm): 30  
Height(mm): 28

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## Photometric Results

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Lumens(lm): 987.49  
Efficiency(%): 75.38%  
Lumens(lm)/Power(W): 88.11  
Central intensity(cd): 6649.875  
Maximum intensity(cd): 6649.875  
Angle of maximum intensity: C=0.0  $\gamma$ =0.0  
Beam Angle(50%Imax): [C0/180]Total=17.9  
[C90/270]Total=17.9  
Field angle(10%Imax): [C0/180]Total=41.0  
[C90/270]Total=41.0  
Maximum s/h(1/2): C0\_180=0.31 C90\_270=0.31  
Maximum s/h(1/4): C0\_180=0.33 C90\_270=0.33  
Up flux rate of lamp(%): 0.00%  
Down flux rate of lamp(%): 75.38%  
Up flux rate of LUM(%): - -  
Down flux rate of LUM(%): 100.00%  
CIE Type : Direct lighting  
Output flux ratio in  $\pi$  solid angle : 98.707%

| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 0.0                | 6649.875      | 0.000       | 0         | .000%       | .000%      |
| 1.0                | 6605.930      | 6.343       | 6.343     | .484%       | .642%      |
| 2.0                | 6435.914      | 18.719      | 25.062    | 1.429%      | 2.538%     |
| 3.0                | 6159.727      | 30.125      | 55.186    | 2.300%      | 5.589%     |
| 4.0                | 5811.609      | 40.072      | 95.258    | 3.059%      | 9.647%     |
| 5.0                | 5347.406      | 48.006      | 143.264   | 3.665%      | 14.508%    |
| 6.0                | 4823.086      | 53.449      | 196.712   | 4.080%      | 19.921%    |
| 7.0                | 4303.617      | 56.649      | 253.362   | 4.324%      | 25.657%    |
| 8.0                | 3774.516      | 57.814      | 311.175   | 4.413%      | 31.512%    |
| 9.0                | 3288.516      | 57.242      | 368.417   | 4.370%      | 37.309%    |
| 10.0               | 2863.617      | 55.675      | 424.092   | 4.250%      | 42.947%    |
| 11.0               | 2471.063      | 53.304      | 477.396   | 4.069%      | 48.345%    |
| 12.0               | 2149.805      | 50.513      | 527.909   | 3.856%      | 53.460%    |
| 13.0               | 1877.695      | 47.796      | 575.705   | 3.649%      | 58.300%    |
| 14.0               | 1622.742      | 44.805      | 620.51    | 3.420%      | 62.837%    |
| 15.0               | 1425.677      | 41.850      | 662.36    | 3.195%      | 67.075%    |
| 16.0               | 1253.285      | 39.254      | 701.615   | 2.997%      | 71.051%    |
| 17.0               | 1100.693      | 36.658      | 738.273   | 2.798%      | 74.763%    |
| 18.0               | 966.347       | 34.081      | 772.354   | 2.602%      | 78.214%    |
| 19.0               | 840.516       | 31.436      | 803.789   | 2.400%      | 81.398%    |
| 20.0               | 721.090       | 28.582      | 832.371   | 2.182%      | 84.292%    |
| 21.0               | 612.759       | 25.613      | 857.984   | 1.955%      | 86.886%    |
| 22.0               | 518.084       | 22.725      | 880.708   | 1.735%      | 89.187%    |
| 23.0               | 422.719       | 19.741      | 900.449   | 1.507%      | 91.186%    |
| 24.0               | 336.544       | 16.600      | 917.049   | 1.267%      | 92.867%    |
| 25.0               | 269.859       | 13.788      | 930.837   | 1.053%      | 94.263%    |
| 26.0               | 195.848       | 10.993      | 941.83    | .839%       | 95.377%    |
| 27.0               | 142.734       | 8.284       | 950.114   | .632%       | 96.215%    |
| 28.0               | 88.734        | 5.860       | 955.974   | .447%       | 96.809%    |
| 29.0               | 51.891        | 3.679       | 959.653   | .281%       | 97.182%    |
| 30.0               | 28.048        | 2.158       | 961.812   | .165%       | 97.400%    |
| 31.0               | 14.604        | 1.187       | 962.999   | .091%       | 97.520%    |
| 32.0               | 9.190         | 0.682       | 963.68    | .052%       | 97.589%    |
| 33.0               | 7.671         | 0.497       | 964.177   | .038%       | 97.640%    |
| 34.0               | 7.102         | 0.447       | 964.624   | .034%       | 97.685%    |
| 35.0               | 6.680         | 0.428       | 965.052   | .033%       | 97.728%    |
| 36.0               | 6.370         | 0.416       | 965.468   | .032%       | 97.770%    |
| 37.0               | 6.124         | 0.408       | 965.875   | .031%       | 97.812%    |

| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 38.0               | 5.871         | 0.400       | 966.276   | .031%       | 97.852%    |
| 39.0               | 5.660         | 0.394       | 966.669   | .030%       | 97.892%    |
| 40.0               | 5.477         | 0.388       | 967.058   | .030%       | 97.931%    |
| 41.0               | 5.316         | 0.384       | 967.442   | .029%       | 97.970%    |
| 42.0               | 5.189         | 0.382       | 967.824   | .029%       | 98.009%    |
| 43.0               | 5.048         | 0.379       | 968.203   | .029%       | 98.047%    |
| 44.0               | 4.964         | 0.378       | 968.581   | .029%       | 98.086%    |
| 45.0               | 4.852         | 0.377       | 968.958   | .029%       | 98.124%    |
| 46.0               | 4.760         | 0.376       | 969.334   | .029%       | 98.162%    |
| 47.0               | 4.711         | 0.377       | 969.711   | .029%       | 98.200%    |
| 48.0               | 4.627         | 0.377       | 970.088   | .029%       | 98.238%    |
| 49.0               | 4.591         | 0.379       | 970.467   | .029%       | 98.277%    |
| 50.0               | 4.500         | 0.379       | 970.846   | .029%       | 98.315%    |
| 51.0               | 4.451         | 0.379       | 971.224   | .029%       | 98.353%    |
| 52.0               | 4.416         | 0.380       | 971.605   | .029%       | 98.392%    |
| 53.0               | 4.380         | 0.383       | 971.987   | .029%       | 98.431%    |
| 54.0               | 4.352         | 0.385       | 972.372   | .029%       | 98.470%    |
| 55.0               | 4.296         | 0.386       | 972.758   | .029%       | 98.509%    |
| 56.0               | 4.282         | 0.388       | 973.146   | .030%       | 98.548%    |
| 57.0               | 4.268         | 0.391       | 973.537   | .030%       | 98.587%    |
| 58.0               | 4.226         | 0.393       | 973.93    | .030%       | 98.627%    |
| 59.0               | 4.198         | 0.394       | 974.323   | .030%       | 98.667%    |
| 60.0               | 4.198         | 0.397       | 974.72    | .030%       | 98.707%    |
| 61.0               | 4.177         | 0.400       | 975.12    | .031%       | 98.748%    |
| 62.0               | 4.170         | 0.402       | 975.522   | .031%       | 98.788%    |
| 63.0               | 4.141         | 0.404       | 975.926   | .031%       | 98.829%    |
| 64.0               | 4.113         | 0.405       | 976.331   | .031%       | 98.870%    |
| 65.0               | 4.120         | 0.407       | 976.739   | .031%       | 98.912%    |
| 66.0               | 4.120         | 0.411       | 977.15    | .031%       | 98.953%    |
| 67.0               | 4.078         | 0.412       | 977.562   | .031%       | 98.995%    |
| 68.0               | 4.071         | 0.413       | 977.975   | .032%       | 99.037%    |
| 69.0               | 4.071         | 0.415       | 978.39    | .032%       | 99.079%    |
| 70.0               | 4.057         | 0.417       | 978.808   | .032%       | 99.121%    |
| 71.0               | 4.064         | 0.420       | 979.227   | .032%       | 99.164%    |
| 72.0               | 4.050         | 0.422       | 979.649   | .032%       | 99.206%    |
| 73.0               | 4.050         | 0.424       | 980.073   | .032%       | 99.249%    |
| 74.0               | 4.050         | 0.426       | 980.499   | .033%       | 99.292%    |
| 75.0               | 4.050         | 0.428       | 980.927   | .033%       | 99.336%    |

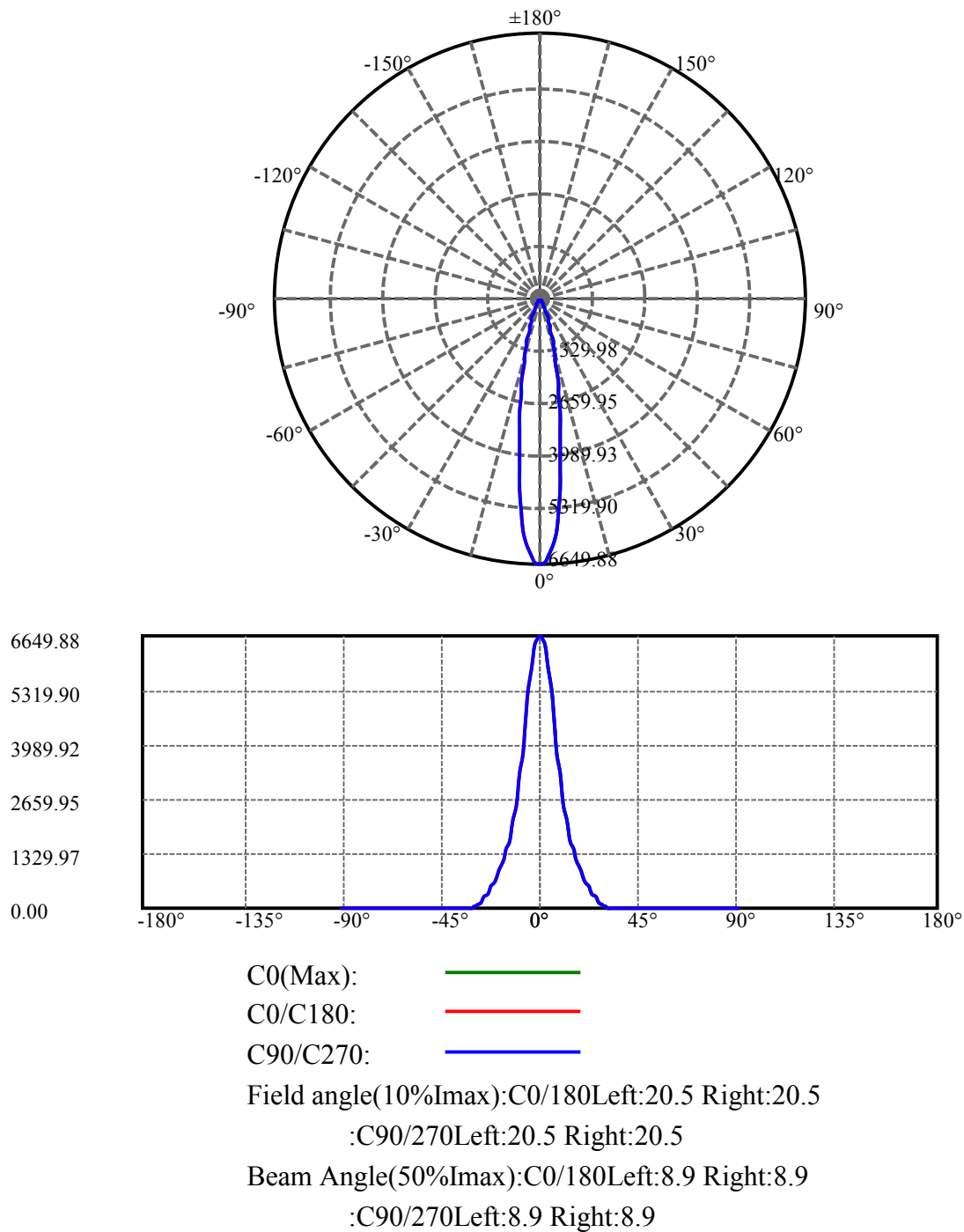
| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 76.0               | 4.036         | 0.429       | 981.356   | .033%       | 99.379%    |
| 77.0               | 4.029         | 0.430       | 981.786   | .033%       | 99.423%    |
| 78.0               | 4.029         | 0.431       | 982.217   | .033%       | 99.466%    |
| 79.0               | 4.029         | 0.433       | 982.65    | .033%       | 99.510%    |
| 80.0               | 4.043         | 0.435       | 983.085   | .033%       | 99.554%    |
| 81.0               | 4.078         | 0.439       | 983.525   | .034%       | 99.599%    |
| 82.0               | 4.064         | 0.442       | 983.966   | .034%       | 99.644%    |
| 83.0               | 4.071         | 0.442       | 984.408   | .034%       | 99.688%    |
| 84.0               | 4.099         | 0.445       | 984.853   | .034%       | 99.733%    |
| 85.0               | 4.050         | 0.445       | 985.298   | .034%       | 99.778%    |
| 86.0               | 4.043         | 0.442       | 985.741   | .034%       | 99.823%    |
| 87.0               | 3.973         | 0.439       | 986.179   | .033%       | 99.868%    |
| 88.0               | 3.973         | 0.435       | 986.614   | .033%       | 99.912%    |
| 89.0               | 3.980         | 0.436       | 987.05    | .033%       | 99.956%    |
| 90.0               | 3.959         | 0.435       | 987.486   | .033%       | 100.000%   |

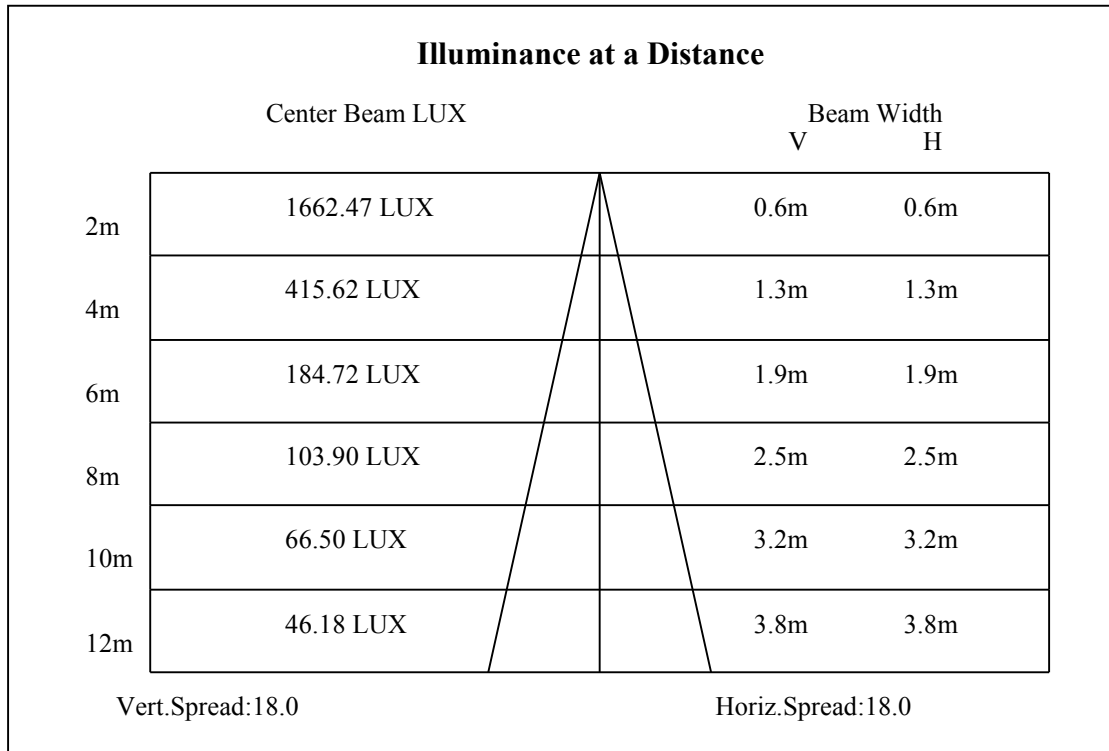
## ZONAL LUMEN SUMMARY

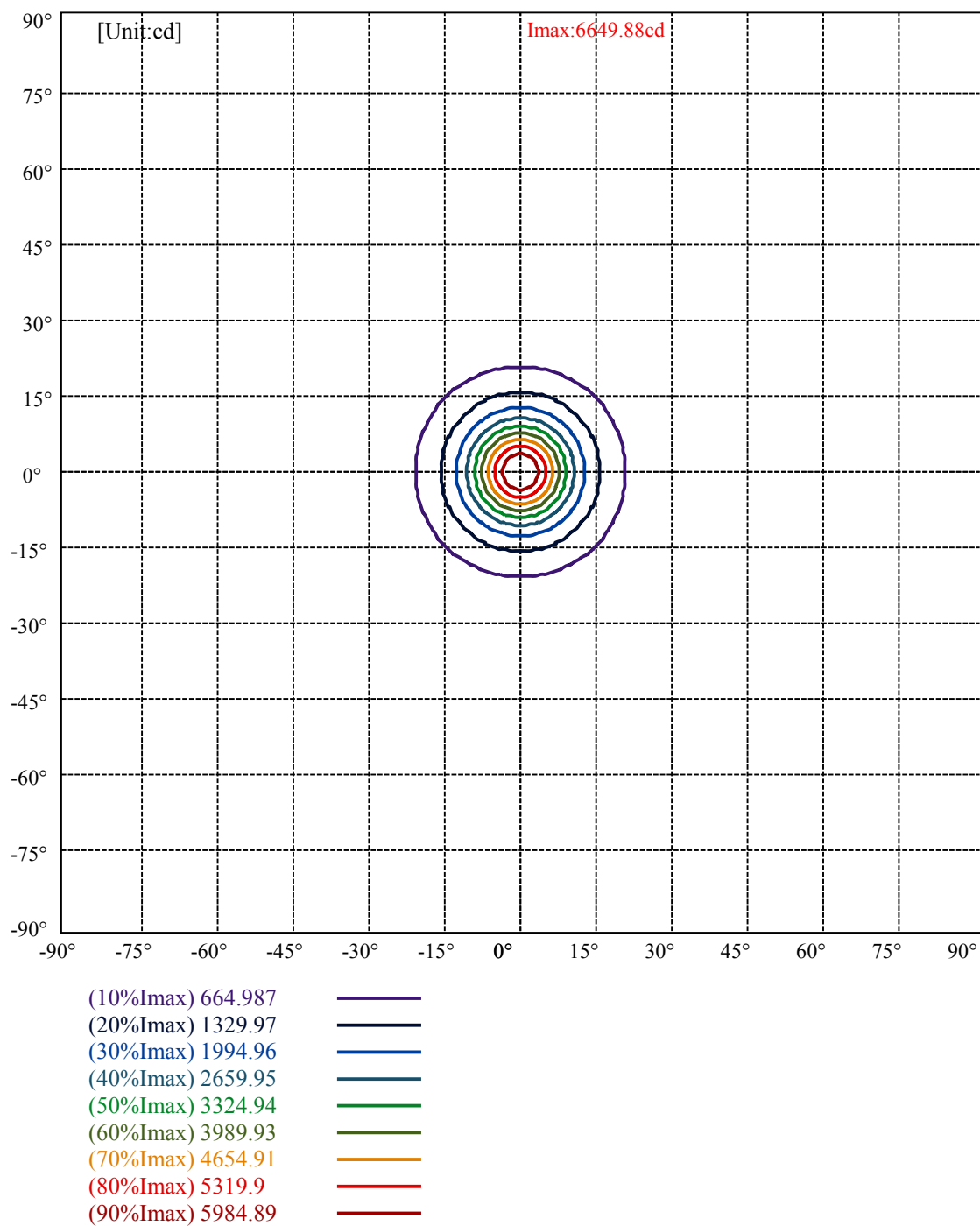
| Zone    | Lumens | %Lamp  | %Fixt   |
|---------|--------|--------|---------|
| 0-30    | 961.81 | 73.42% | 97.40%  |
| 0-40    | 967.06 | 73.82% | 97.93%  |
| 0-60    | 974.72 | 74.41% | 98.71%  |
| 0-90    | 987.05 | 75.35% | 99.96%  |
| 0-120   | 987.05 | 75.35% | 99.96%  |
| 0-180   | 987.49 | 75.38% | 100.00% |
| 60-90   | 12.73  | 0.97%  | 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%   |
| 0-18.56 | 789.99 | 60.30% | 80.00%  |

## ZONAL LUMEN SUMMARY

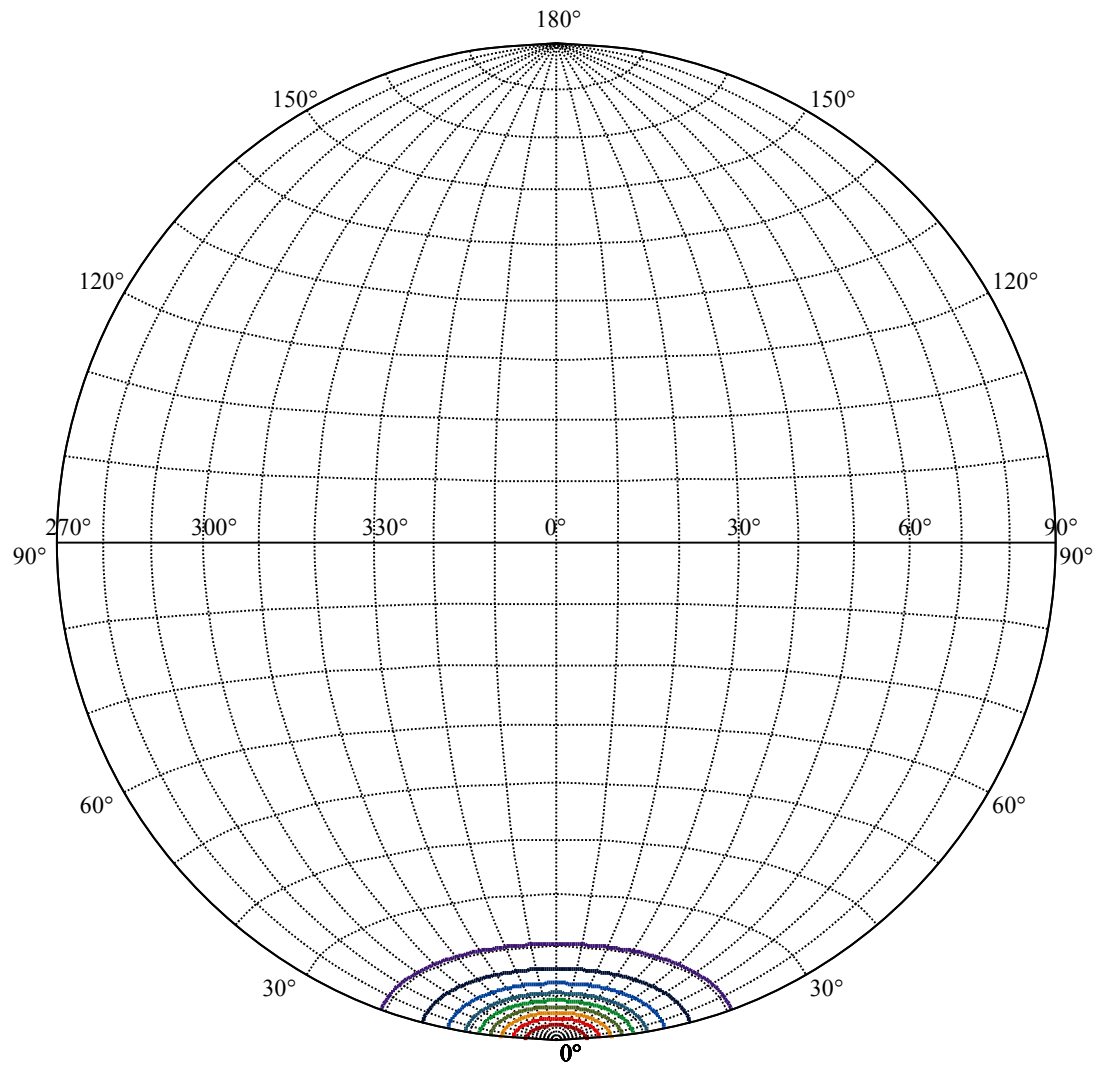
|         |        |
|---------|--------|
| 0-10    | 424.09 |
| 10-20   | 408.28 |
| 20-30   | 129.44 |
| 30-40   | 5.25   |
| 40-50   | 3.79   |
| 50-60   | 3.87   |
| 60-70   | 4.09   |
| 70-80   | 4.28   |
| 80-90   | 3.96   |
| 90-100  | 0.00   |
| 100-110 | 0.00   |
| 110-120 | 0.00   |
| 120-130 | 0.00   |
| 130-140 | 0.00   |
| 140-150 | 0.00   |
| 150-160 | 0.00   |
| 160-170 | 0.00   |
| 170-180 | 0.00   |









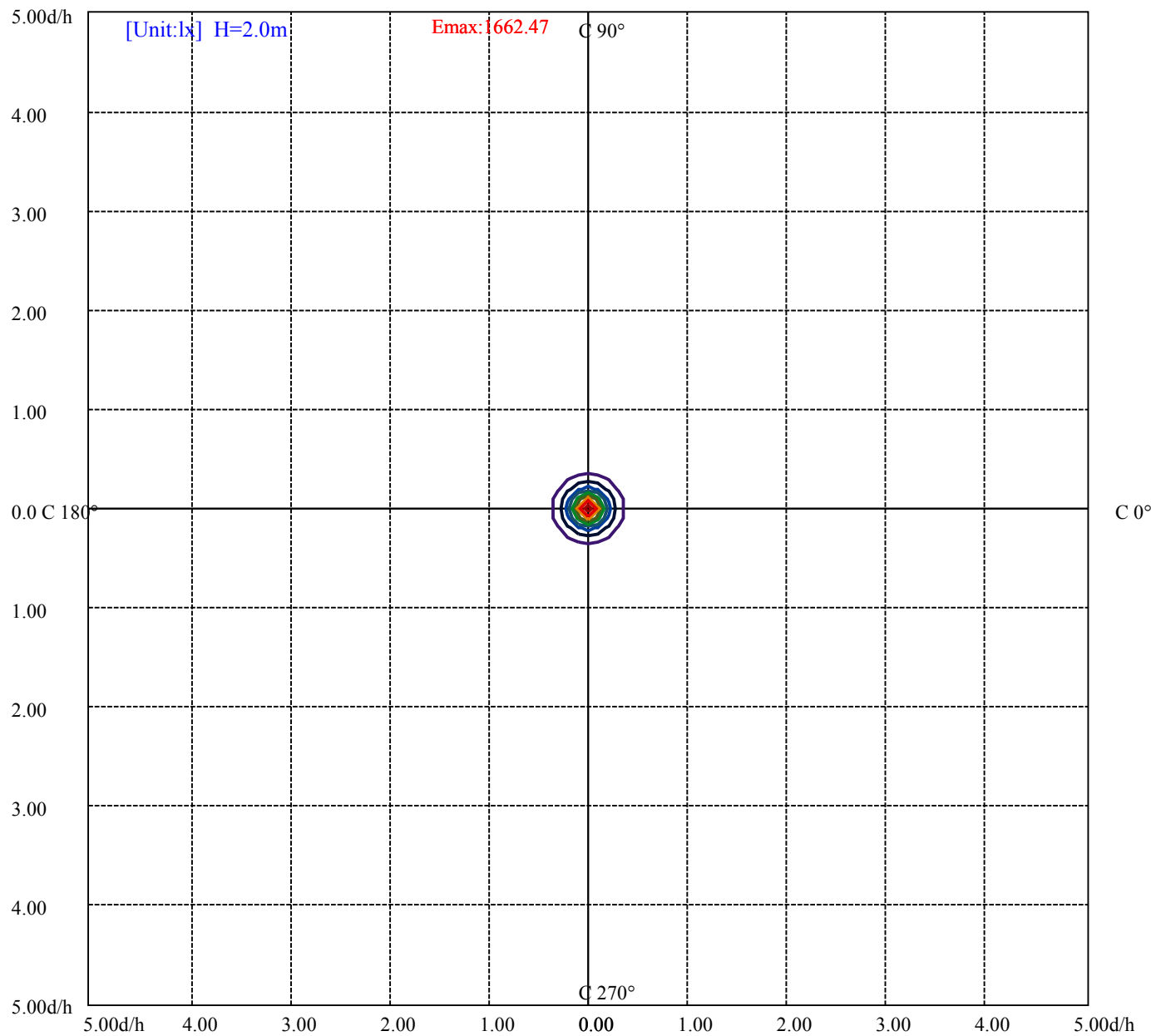


House

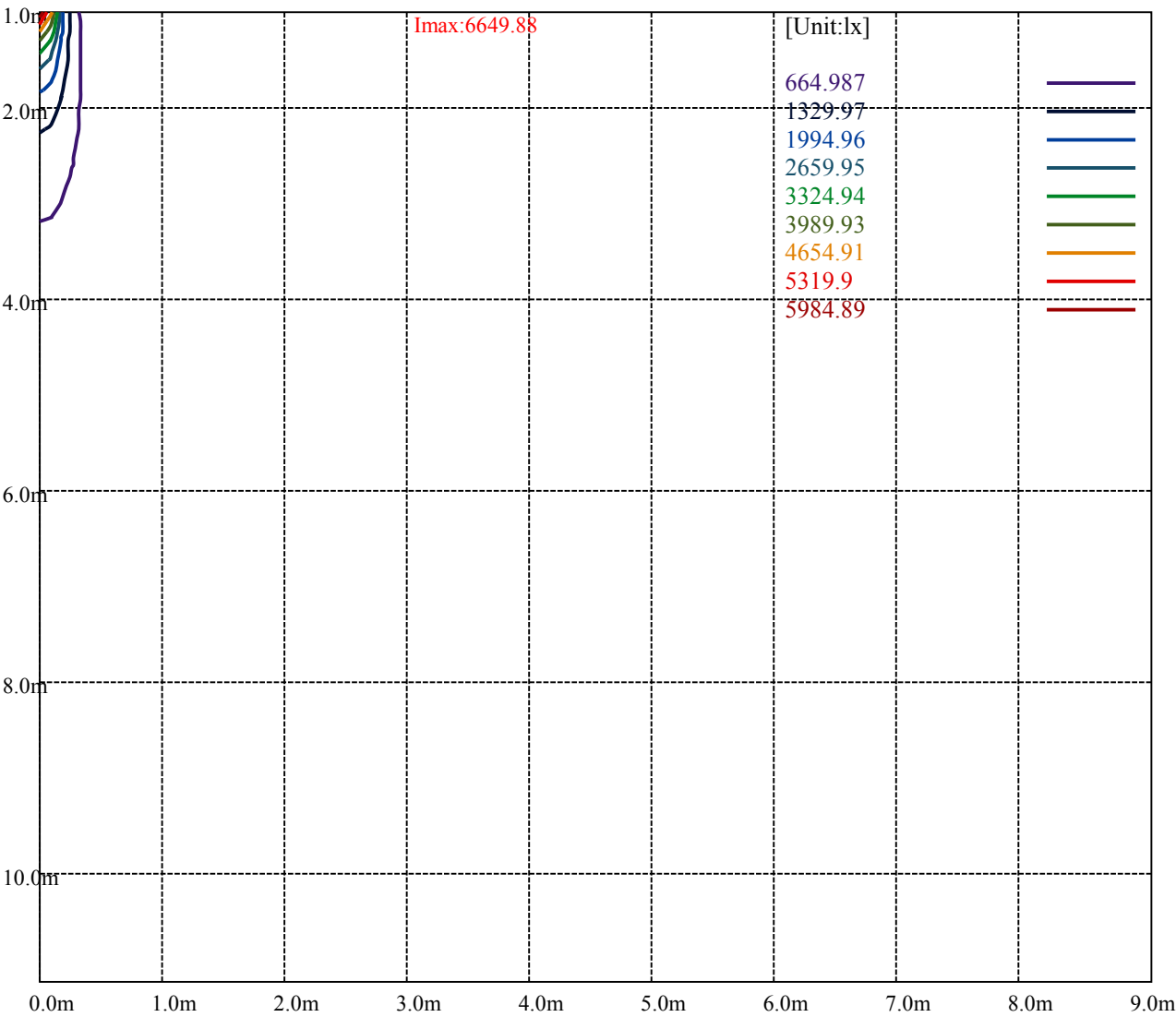
[Unit:cd]

Road

|                     |   |
|---------------------|---|
| <b>Imax:6649.88</b> |   |
| (10%Imax) 664.987   | — |
| (20%Imax) 1329.97   | — |
| (30%Imax) 1994.96   | — |
| (40%Imax) 2659.95   | — |
| (50%Imax) 3324.94   | — |
| (60%Imax) 3989.93   | — |
| (70%Imax) 4654.91   | — |
| (80%Imax) 5319.9    | — |
| (90%Imax) 5984.89   | — |



|           |          |  |
|-----------|----------|--|
| (10%Emax) | 166.2467 |  |
| (20%Emax) | 332.4925 |  |
| (30%Emax) | 498.74   |  |
| (40%Emax) | 664.9875 |  |
| (50%Emax) | 831.2325 |  |
| (60%Emax) | 997.48   |  |
| (70%Emax) | 1163.728 |  |
| (80%Emax) | 1329.973 |  |
| (90%Emax) | 1496.22  |  |



Luminance Table

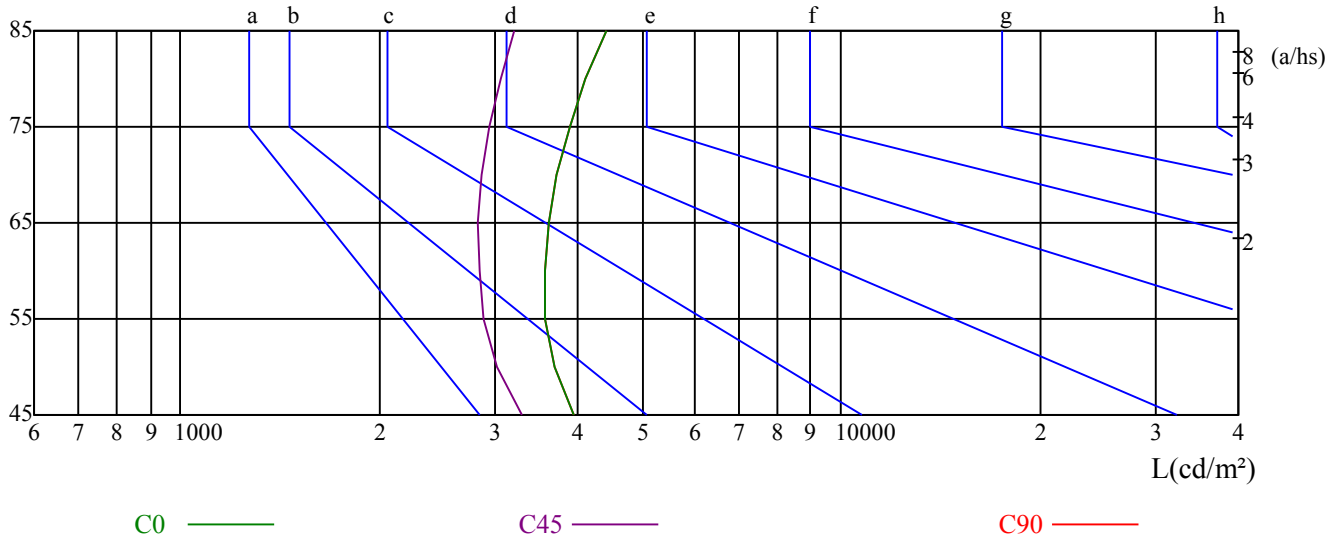
| $\gamma$ | 45   | 50   | 55   | 60   | 65   | 70   | 75   | 80   | 85   |
|----------|------|------|------|------|------|------|------|------|------|
| C0       | 3943 | 3683 | 3567 | 3565 | 3609 | 3698 | 3878 | 4111 | 4425 |
| C45      | 3286 | 3023 | 2885 | 2839 | 2828 | 2849 | 2934 | 3049 | 3210 |
| C90      | 3943 | 3683 | 3567 | 3565 | 3609 | 3698 | 3878 | 4111 | 4425 |

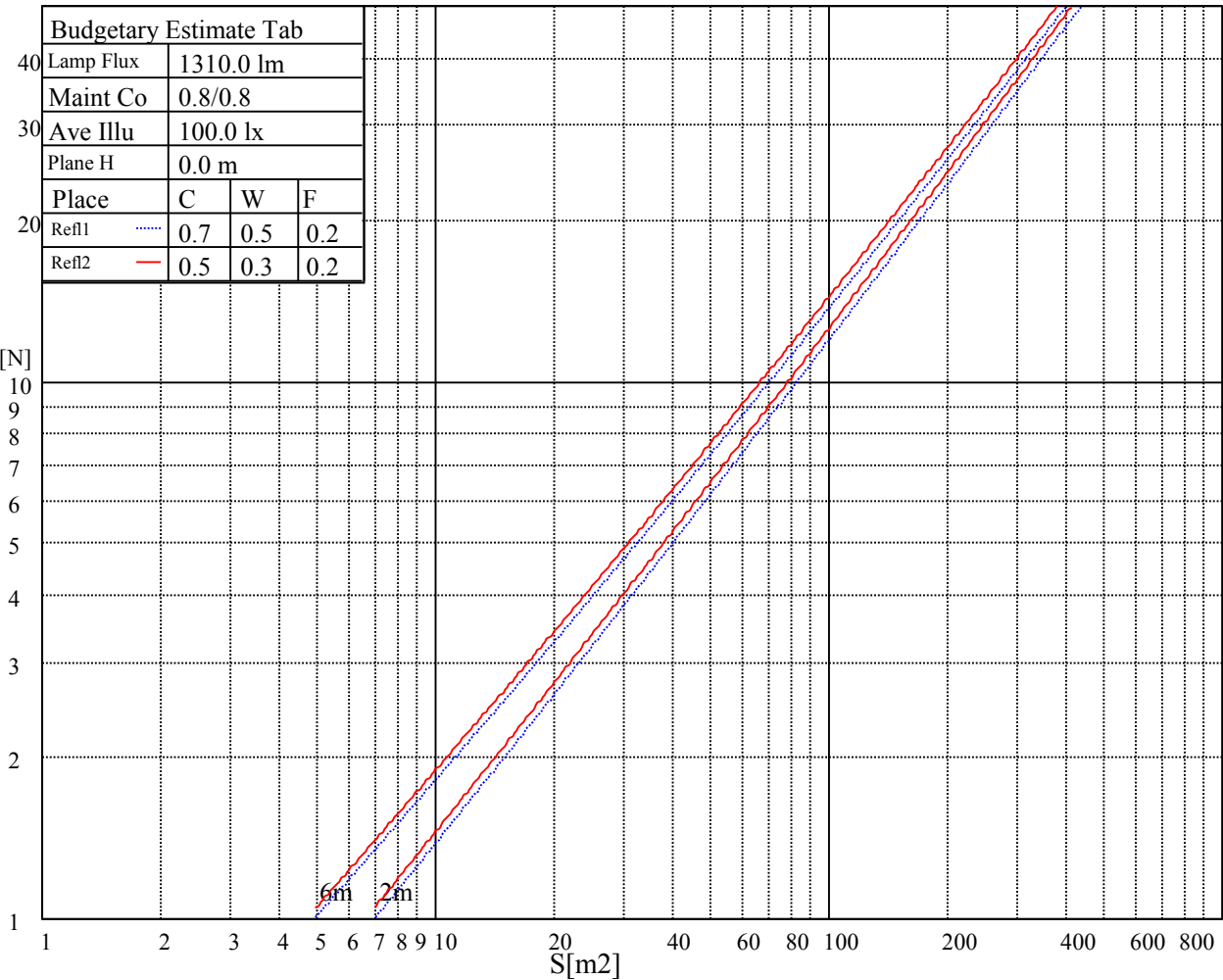
| L(Hor)(65) | L(Ver)(65) | L45(65) | L(Hor)(75) | L(Ver)(75) | L45(75) | L(Hor)(85) | L(Ver)(85) | L45(85) |
|------------|------------|---------|------------|------------|---------|------------|------------|---------|
| 10833      | 10833      | 10833   | 17387      | 17387      | 17387   | 51632      | 51632      | 51632   |

Glare Table

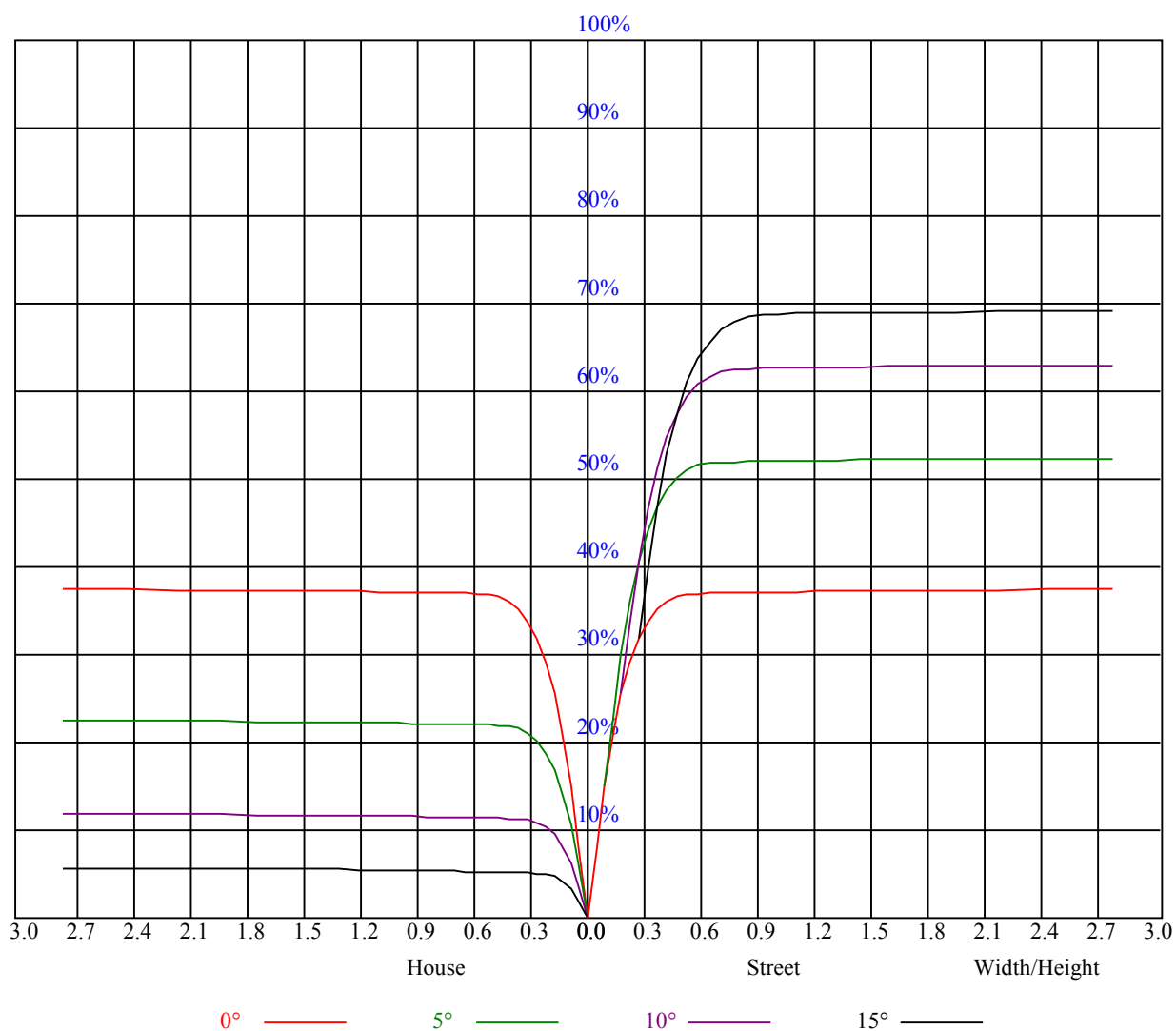
| Glare | Quality | Service Values Illuminance(lx) |      |      |            |            |            |            |            |
|-------|---------|--------------------------------|------|------|------------|------------|------------|------------|------------|
| 1.15  | A       | 2000                           | 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

 $\gamma(^{\circ})$ 



| 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     | 0.90                                    | 0.90 | 0.90 | 0.88 | 0.88 | 0.88 | 0.84 | 0.84 | 0.84 | 0.80 | 0.80 | 0.80 | 0.77 | 0.77 | 0.77 | 0.75 |
| 1     | 0.85                                    | 0.84 | 0.82 | 0.83 | 0.82 | 0.81 | 0.80 | 0.79 | 0.79 | 0.78 | 0.77 | 0.76 | 0.75 | 0.75 | 0.74 | 0.73 |
| 2     | 0.81                                    | 0.79 | 0.77 | 0.80 | 0.78 | 0.76 | 0.78 | 0.76 | 0.75 | 0.76 | 0.74 | 0.73 | 0.74 | 0.73 | 0.72 | 0.71 |
| 3     | 0.78                                    | 0.76 | 0.73 | 0.77 | 0.75 | 0.73 | 0.75 | 0.73 | 0.72 | 0.74 | 0.72 | 0.71 | 0.72 | 0.71 | 0.70 | 0.69 |
| 4     | 0.75                                    | 0.73 | 0.70 | 0.75 | 0.72 | 0.70 | 0.73 | 0.71 | 0.69 | 0.72 | 0.70 | 0.68 | 0.70 | 0.69 | 0.68 | 0.67 |
| 5     | 0.73                                    | 0.70 | 0.68 | 0.72 | 0.70 | 0.68 | 0.71 | 0.69 | 0.67 | 0.70 | 0.68 | 0.66 | 0.69 | 0.67 | 0.66 | 0.65 |
| 6     | 0.71                                    | 0.68 | 0.66 | 0.70 | 0.68 | 0.66 | 0.69 | 0.67 | 0.65 | 0.68 | 0.66 | 0.65 | 0.68 | 0.66 | 0.64 | 0.64 |
| 7     | 0.69                                    | 0.66 | 0.64 | 0.68 | 0.66 | 0.64 | 0.68 | 0.65 | 0.63 | 0.67 | 0.65 | 0.63 | 0.66 | 0.64 | 0.63 | 0.62 |
| 8     | 0.67                                    | 0.64 | 0.62 | 0.67 | 0.64 | 0.62 | 0.66 | 0.64 | 0.62 | 0.65 | 0.63 | 0.62 | 0.65 | 0.63 | 0.61 | 0.61 |
| 9     | 0.65                                    | 0.63 | 0.61 | 0.65 | 0.62 | 0.61 | 0.64 | 0.62 | 0.60 | 0.64 | 0.62 | 0.60 | 0.63 | 0.61 | 0.60 | 0.59 |
| 10    | 0.64                                    | 0.61 | 0.59 | 0.64 | 0.61 | 0.59 | 0.63 | 0.61 | 0.59 | 0.63 | 0.60 | 0.59 | 0.62 | 0.60 | 0.59 | 0.58 |



## Intensity data(cd)

| C/ $\gamma$ (°) | 0.0     | 1.0     | 2.0     | 3.0     | 4.0     | 5.0     | 6.0     | 7.0     | 8.0     |
|-----------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0.0             | 6562.13 | 6710.63 | 6785.44 | 6758.44 | 6652.13 | 6352.31 | 5915.25 | 5406.75 | 4889.81 |
| 45.0            | 6672.94 | 6775.88 | 6772.50 | 6675.19 | 6517.69 | 6100.31 | 5691.94 | 5259.94 | 4595.63 |
| 90.0            | 6689.81 | 6645.38 | 6474.38 | 6212.81 | 5878.13 | 5403.38 | 4849.88 | 4332.38 | 3764.25 |
| 135.0           | 6674.63 | 6573.94 | 6325.31 | 5935.50 | 5512.50 | 5034.94 | 4410.56 | 3898.13 | 3436.88 |
| 180.0           | 6562.13 | 6311.25 | 5889.38 | 5371.31 | 4862.81 | 4282.88 | 3708.56 | 3243.38 | 2786.63 |
| 225.0           | 6672.94 | 6484.50 | 6136.31 | 5675.06 | 5196.38 | 4599.00 | 4067.44 | 3517.31 | 3035.81 |
| 270.0           | 6689.81 | 6645.94 | 6470.44 | 6213.94 | 5766.19 | 5297.06 | 4777.31 | 4190.06 | 3630.94 |
| 315.0           | 6674.63 | 6699.94 | 6633.56 | 6435.56 | 6107.06 | 5709.38 | 5163.75 | 4581.00 | 4056.19 |
| 360.0           | 6562.13 | 6710.63 | 6785.44 | 6758.44 | 6652.13 | 6352.31 | 5915.25 | 5406.75 | 4889.81 |
| C/ $\gamma$ (°) | 9.0     | 10.0    | 11.0    | 12.0    | 13.0    | 14.0    | 15.0    | 16.0    | 17.0    |
| 0.0             | 4285.13 | 3696.75 | 3213.00 | 2788.88 | 2370.38 | 2030.06 | 1812.38 | 1549.69 | 1349.44 |
| 45.0            | 4007.25 | 3564.56 | 2990.81 | 2548.13 | 2256.19 | 1910.25 | 1679.06 | 1482.75 | 1277.44 |
| 90.0            | 3242.25 | 2832.75 | 2480.63 | 2113.88 | 1864.13 | 1648.13 | 1438.31 | 1213.88 | 1115.04 |
| 135.0           | 2930.63 | 2575.13 | 2266.31 | 1974.38 | 1722.94 | 1528.31 | 1337.06 | 1173.38 | 1042.31 |
| 180.0           | 2443.50 | 2118.94 | 1845.56 | 1639.69 | 1456.88 | 1214.44 | 1116.00 | 989.38  | 854.55  |
| 225.0           | 2664.00 | 2340.56 | 2007.00 | 1780.31 | 1579.50 | 1364.63 | 1110.54 | 1077.53 | 950.91  |
| 270.0           | 3181.50 | 2784.38 | 2356.31 | 2077.31 | 1839.94 | 1582.31 | 1406.81 | 1249.88 | 1094.63 |
| 315.0           | 3553.88 | 2995.88 | 2608.88 | 2275.88 | 1931.63 | 1703.81 | 1505.25 | 1289.81 | 1121.23 |
| 360.0           | 4285.13 | 3696.75 | 3213.00 | 2788.88 | 2370.38 | 2030.06 | 1812.38 | 1549.69 | 1349.44 |
| C/ $\gamma$ (°) | 18.0    | 19.0    | 20.0    | 21.0    | 22.0    | 23.0    | 24.0    | 25.0    | 26.0    |
| 0.0             | 1198.13 | 1081.69 | 915.75  | 803.81  | 698.63  | 594.00  | 492.19  | 419.06  | 315.56  |
| 45.0            | 1127.81 | 992.25  | 844.88  | 740.81  | 645.75  | 528.19  | 439.88  | 352.13  | 286.88  |
| 90.0            | 1016.61 | 834.64  | 726.58  | 620.44  | 527.23  | 430.65  | 338.51  | 266.06  | 198.23  |
| 135.0           | 897.75  | 778.50  | 661.50  | 556.88  | 469.69  | 380.25  | 287.44  | 245.59  | 163.74  |
| 180.0           | 723.77  | 625.78  | 534.15  | 423.56  | 341.78  | 265.67  | 197.83  | 139.44  | 91.80   |
| 225.0           | 806.29  | 700.03  | 604.24  | 486.11  | 397.97  | 309.04  | 229.61  | 172.24  | 113.57  |
| 270.0           | 952.31  | 835.88  | 714.94  | 617.63  | 514.13  | 416.25  | 333.56  | 284.63  | 178.76  |
| 315.0           | 1008.11 | 875.36  | 766.69  | 652.84  | 549.51  | 457.71  | 373.33  | 279.73  | 218.25  |
| 360.0           | 1198.13 | 1081.69 | 915.75  | 803.81  | 698.63  | 594.00  | 492.19  | 419.06  | 315.56  |
| C/ $\gamma$ (°) | 27.0    | 28.0    | 29.0    | 30.0    | 31.0    | 32.0    | 33.0    | 34.0    | 35.0    |
| 0.0             | 287.44  | 175.67  | 118.52  | 76.28   | 37.69   | 16.09   | 9.34    | 8.10    | 7.37    |
| 45.0            | 213.24  | 146.42  | 96.47   | 54.06   | 23.51   | 10.18   | 8.55    | 7.54    | 7.09    |
| 90.0            | 137.36  | 91.29   | 52.43   | 20.70   | 10.35   | 8.61    | 7.71    | 7.26    | 6.86    |
| 135.0           | 106.71  | 58.78   | 26.66   | 11.48   | 8.10    | 7.31    | 6.98    | 6.64    | 6.30    |
| 180.0           | 50.68   | 20.81   | 9.79    | 7.71    | 7.26    | 6.81    | 6.47    | 6.19    | 5.91    |
| 225.0           | 60.02   | 34.48   | 14.51   | 9.11    | 7.88    | 7.31    | 6.86    | 6.58    | 6.24    |
| 270.0           | 124.43  | 79.31   | 35.49   | 16.26   | 9.79    | 8.27    | 7.65    | 7.20    | 6.81    |
| 315.0           | 162.00  | 103.11  | 61.26   | 28.80   | 12.26   | 8.94    | 7.82    | 7.31    | 6.86    |
| 360.0           | 287.44  | 175.67  | 118.52  | 76.28   | 37.69   | 16.09   | 9.34    | 8.10    | 7.37    |
| C/ $\gamma$ (°) | 36.0    | 37.0    | 38.0    | 39.0    | 40.0    | 41.0    | 42.0    | 43.0    | 44.0    |
| 0.0             | 6.98    | 6.64    | 6.24    | 6.02    | 5.74    | 5.57    | 5.46    | 5.29    | 5.18    |
| 45.0            | 6.75    | 6.47    | 6.24    | 5.91    | 5.74    | 5.57    | 5.40    | 5.23    | 5.12    |
| 90.0            | 6.53    | 6.30    | 6.02    | 5.79    | 5.63    | 5.46    | 5.29    | 5.18    | 5.06    |
| 135.0           | 6.08    | 5.79    | 5.63    | 5.51    | 5.34    | 5.12    | 5.01    | 4.89    | 4.89    |
| 180.0           | 5.68    | 5.57    | 5.40    | 5.23    | 5.12    | 5.01    | 4.89    | 4.78    | 4.73    |
| 225.0           | 6.02    | 5.79    | 5.57    | 5.40    | 5.29    | 5.12    | 5.01    | 4.89    | 4.84    |
| 270.0           | 6.47    | 6.19    | 5.91    | 5.74    | 5.51    | 5.34    | 5.23    | 5.06    | 4.95    |
| 315.0           | 6.47    | 6.24    | 5.96    | 5.68    | 5.46    | 5.34    | 5.23    | 5.06    | 4.95    |
| 360.0           | 6.98    | 6.64    | 6.24    | 6.02    | 5.74    | 5.57    | 5.46    | 5.29    | 5.18    |



## Intensity data(cd)

| C/ $\gamma$ (°) | 45.0 | 46.0 | 47.0 | 48.0 | 49.0 | 50.0 | 51.0 | 52.0 | 53.0 |
|-----------------|------|------|------|------|------|------|------|------|------|
| 0.0             | 5.01 | 4.95 | 4.84 | 4.78 | 4.67 | 4.61 | 4.56 | 4.56 | 4.44 |
| 45.0            | 5.01 | 4.89 | 4.84 | 4.73 | 4.73 | 4.61 | 4.56 | 4.50 | 4.50 |
| 90.0            | 4.95 | 4.84 | 4.78 | 4.67 | 4.67 | 4.56 | 4.50 | 4.44 | 4.39 |
| 135.0           | 4.73 | 4.67 | 4.67 | 4.56 | 4.50 | 4.39 | 4.33 | 4.33 | 4.28 |
| 180.0           | 4.67 | 4.56 | 4.56 | 4.50 | 4.50 | 4.39 | 4.39 | 4.33 | 4.33 |
| 225.0           | 4.78 | 4.67 | 4.61 | 4.56 | 4.56 | 4.44 | 4.44 | 4.39 | 4.33 |
| 270.0           | 4.89 | 4.78 | 4.67 | 4.61 | 4.61 | 4.56 | 4.44 | 4.44 | 4.44 |
| 315.0           | 4.78 | 4.73 | 4.73 | 4.61 | 4.50 | 4.44 | 4.39 | 4.33 | 4.33 |
| 360.0           | 5.01 | 4.95 | 4.84 | 4.78 | 4.67 | 4.61 | 4.56 | 4.56 | 4.44 |
| C/ $\gamma$ (°) | 54.0 | 55.0 | 56.0 | 57.0 | 58.0 | 59.0 | 60.0 | 61.0 | 62.0 |
| 0.0             | 4.44 | 4.33 | 4.33 | 4.33 | 4.33 | 4.28 | 4.22 | 4.22 | 4.22 |
| 45.0            | 4.44 | 4.39 | 4.33 | 4.33 | 4.28 | 4.22 | 4.28 | 4.22 | 4.22 |
| 90.0            | 4.39 | 4.33 | 4.28 | 4.28 | 4.22 | 4.22 | 4.22 | 4.22 | 4.16 |
| 135.0           | 4.33 | 4.22 | 4.28 | 4.22 | 4.16 | 4.16 | 4.11 | 4.16 | 4.16 |
| 180.0           | 4.22 | 4.28 | 4.22 | 4.22 | 4.22 | 4.22 | 4.22 | 4.16 | 4.16 |
| 225.0           | 4.33 | 4.28 | 4.28 | 4.28 | 4.22 | 4.16 | 4.16 | 4.16 | 4.16 |
| 270.0           | 4.39 | 4.28 | 4.28 | 4.22 | 4.22 | 4.16 | 4.22 | 4.16 | 4.16 |
| 315.0           | 4.28 | 4.28 | 4.28 | 4.28 | 4.16 | 4.16 | 4.16 | 4.11 | 4.11 |
| 360.0           | 4.44 | 4.33 | 4.33 | 4.33 | 4.33 | 4.28 | 4.22 | 4.22 | 4.22 |
| C/ $\gamma$ (°) | 63.0 | 64.0 | 65.0 | 66.0 | 67.0 | 68.0 | 69.0 | 70.0 | 71.0 |
| 0.0             | 4.16 | 4.11 | 4.16 | 4.16 | 4.11 | 4.16 | 4.11 | 4.05 | 4.11 |
| 45.0            | 4.22 | 4.16 | 4.16 | 4.16 | 4.16 | 4.11 | 4.11 | 4.11 | 4.11 |
| 90.0            | 4.16 | 4.16 | 4.11 | 4.16 | 4.11 | 4.16 | 4.11 | 4.05 | 4.11 |
| 135.0           | 4.11 | 4.05 | 4.11 | 4.05 | 4.05 | 3.99 | 3.99 | 4.05 | 3.99 |
| 180.0           | 4.16 | 4.11 | 4.11 | 4.11 | 4.05 | 4.05 | 4.11 | 4.11 | 4.11 |
| 225.0           | 4.16 | 4.11 | 4.16 | 4.16 | 4.05 | 4.05 | 4.05 | 4.05 | 3.99 |
| 270.0           | 4.11 | 4.16 | 4.11 | 4.11 | 4.05 | 4.05 | 4.11 | 4.05 | 4.11 |
| 315.0           | 4.05 | 4.05 | 4.05 | 4.05 | 4.05 | 3.99 | 3.99 | 3.99 | 3.99 |
| 360.0           | 4.16 | 4.11 | 4.16 | 4.16 | 4.11 | 4.16 | 4.11 | 4.05 | 4.11 |
| C/ $\gamma$ (°) | 72.0 | 73.0 | 74.0 | 75.0 | 76.0 | 77.0 | 78.0 | 79.0 | 80.0 |
| 0.0             | 4.05 | 4.05 | 4.05 | 4.11 | 4.05 | 3.99 | 3.99 | 3.99 | 4.05 |
| 45.0            | 4.11 | 4.05 | 4.05 | 4.11 | 4.05 | 3.99 | 4.05 | 4.05 | 4.05 |
| 90.0            | 4.11 | 4.11 | 4.11 | 4.11 | 4.05 | 4.11 | 4.05 | 4.11 | 4.11 |
| 135.0           | 3.99 | 3.99 | 4.05 | 3.99 | 3.94 | 3.99 | 3.99 | 3.99 | 3.99 |
| 180.0           | 4.05 | 4.05 | 4.05 | 4.05 | 4.05 | 4.05 | 4.05 | 4.05 | 4.05 |
| 225.0           | 4.05 | 4.11 | 4.05 | 4.05 | 3.99 | 4.05 | 4.05 | 4.05 | 4.05 |
| 270.0           | 4.05 | 4.05 | 4.05 | 3.99 | 4.11 | 4.05 | 4.11 | 4.05 | 4.11 |
| 315.0           | 3.99 | 3.99 | 3.99 | 3.99 | 4.05 | 3.99 | 3.94 | 3.94 | 3.94 |
| 360.0           | 4.05 | 4.05 | 4.05 | 4.11 | 4.05 | 3.99 | 3.99 | 3.99 | 4.05 |
| C/ $\gamma$ (°) | 81.0 | 82.0 | 83.0 | 84.0 | 85.0 | 86.0 | 87.0 | 88.0 | 89.0 |
| 0.0             | 4.05 | 4.05 | 3.99 | 4.05 | 3.99 | 3.99 | 3.99 | 3.99 | 4.05 |
| 45.0            | 4.11 | 4.05 | 4.05 | 4.05 | 3.99 | 3.99 | 3.99 | 3.99 | 3.99 |
| 90.0            | 4.16 | 4.22 | 4.28 | 4.28 | 4.11 | 3.99 | 3.94 | 3.94 | 3.94 |
| 135.0           | 3.99 | 3.99 | 3.99 | 3.94 | 3.94 | 3.99 | 3.99 | 3.94 | 3.99 |
| 180.0           | 4.11 | 4.11 | 4.05 | 4.05 | 4.11 | 3.99 | 3.99 | 3.99 | 3.99 |
| 225.0           | 4.05 | 4.05 | 4.05 | 4.05 | 4.05 | 3.99 | 3.99 | 3.99 | 3.99 |
| 270.0           | 4.16 | 4.11 | 4.22 | 4.39 | 4.22 | 4.39 | 3.94 | 3.99 | 3.99 |
| 315.0           | 3.99 | 3.94 | 3.94 | 3.99 | 3.99 | 3.99 | 3.94 | 3.94 | 3.88 |
| 360.0           | 4.05 | 4.05 | 3.99 | 4.05 | 3.99 | 3.99 | 3.99 | 3.99 | 4.05 |

## Intensity data(cd)

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|                       |      |
|-----------------------|------|
| C/ $\gamma(^{\circ})$ | 90.0 |
| 0.0                   | 3.99 |
| 45.0                  | 3.99 |
| 90.0                  | 3.94 |
| 135.0                 | 3.88 |
| 180.0                 | 3.99 |
| 225.0                 | 3.99 |
| 270.0                 | 3.94 |
| 315.0                 | 3.94 |
| 360.0                 | 3.99 |