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## Nata

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|                              |                     |
|------------------------------|---------------------|
| LumCAT: 1709-M               |                     |
| Luminaire: 92.70.125.00      |                     |
| Report No: NT2017110102      | Voltage(V): 19.9000 |
| Test No: GC2017110103        | Current(A): 0.3000  |
| LampCAT: NICHIA NVNWS007Z-V1 | Power (W): 5.9700   |
| Lamp flux(lm): 810.0         | PF: 0.0000          |
| Number of Lamps: 1           | Ballast type: DC    |
| Length(mm): 46               | Width(mm): 46       |
| Phm Type: C                  | Height(mm): 0       |

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## Photometric Results

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Lumens(lm): 736.83  
Efficiency(%): 90.97%  
Lumens(lm)/Power(W): 123.42  
Central intensity(cd): 4897.542  
Maximum intensity(cd): 4897.542  
Angle of maximum intensity: C=0.0  $\gamma$ =0.0  
Beam Angle(50%Imax): [C0/180]Total=11.8  
                                  [C90/270]Total=11.8  
Field angle(10%Imax): [C0/180]Total=31.7  
                                  [C90/270]Total=31.7  
Maximum s/h(1/2): C0\_180=0.20 C90\_270=0.20  
Maximum s/h(1/4): C0\_180=0.22 C90\_270=0.22  
Up flux rate of lamp(%): 0.00%  
Down flux rate of lamp(%): 90.97%  
Up flux rate of LUM(%): - -  
Down flux rate of LUM(%): 100.00%  
CIE Type : Direct lighting  
Output flux ratio in  $\pi$  solid angle : 98.751%

| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 0.0                | 4897.542      | 0.000       | 0         | .000%       | .000%      |
| 1.0                | 4782.061      | 4.632       | 4.632     | .572%       | .629%      |
| 2.0                | 4421.786      | 13.210      | 17.842    | 1.631%      | 2.421%     |
| 3.0                | 3944.240      | 20.009      | 37.851    | 2.470%      | 5.137%     |
| 4.0                | 3447.976      | 24.744      | 62.595    | 3.055%      | 8.495%     |
| 5.0                | 2881.858      | 27.231      | 89.825    | 3.362%      | 12.191%    |
| 6.0                | 2391.994      | 27.715      | 117.541   | 3.422%      | 15.952%    |
| 7.0                | 1965.445      | 27.047      | 144.587   | 3.339%      | 19.623%    |
| 8.0                | 1551.352      | 25.169      | 169.756   | 3.107%      | 23.039%    |
| 9.0                | 1262.808      | 22.807      | 192.564   | 2.816%      | 26.134%    |
| 10.0               | 1028.667      | 20.737      | 213.301   | 2.560%      | 28.948%    |
| 11.0               | 859.575       | 18.867      | 232.168   | 2.329%      | 31.509%    |
| 12.0               | 738.065       | 17.464      | 249.633   | 2.156%      | 33.879%    |
| 13.0               | 646.541       | 16.432      | 266.064   | 2.029%      | 36.109%    |
| 14.0               | 574.383       | 15.628      | 281.692   | 1.929%      | 38.230%    |
| 15.0               | 524.454       | 15.085      | 296.777   | 1.862%      | 40.278%    |
| 16.0               | 484.331       | 14.782      | 311.559   | 1.825%      | 42.284%    |
| 17.0               | 449.639       | 14.544      | 326.103   | 1.796%      | 44.258%    |
| 18.0               | 422.923       | 14.387      | 340.49    | 1.776%      | 46.210%    |
| 19.0               | 400.948       | 14.334      | 354.824   | 1.770%      | 48.155%    |
| 20.0               | 376.696       | 14.233      | 369.057   | 1.757%      | 50.087%    |
| 21.0               | 355.410       | 14.058      | 383.115   | 1.736%      | 51.995%    |
| 22.0               | 337.248       | 13.919      | 397.034   | 1.718%      | 53.884%    |
| 23.0               | 319.437       | 13.779      | 410.813   | 1.701%      | 55.754%    |
| 24.0               | 304.717       | 13.646      | 424.459   | 1.685%      | 57.606%    |
| 25.0               | 294.042       | 13.614      | 438.074   | 1.681%      | 59.454%    |
| 26.0               | 285.399       | 13.678      | 451.751   | 1.689%      | 61.310%    |
| 27.0               | 279.040       | 13.809      | 465.56    | 1.705%      | 63.184%    |
| 28.0               | 274.725       | 14.020      | 479.581   | 1.731%      | 65.087%    |
| 29.0               | 268.200       | 14.204      | 493.785   | 1.754%      | 67.015%    |
| 30.0               | 263.066       | 14.344      | 508.129   | 1.771%      | 68.962%    |
| 31.0               | 258.662       | 14.519      | 522.648   | 1.792%      | 70.932%    |
| 32.0               | 254.574       | 14.704      | 537.352   | 1.815%      | 72.927%    |
| 33.0               | 250.458       | 14.878      | 552.23    | 1.837%      | 74.947%    |
| 34.0               | 246.549       | 15.041      | 567.271   | 1.857%      | 76.988%    |
| 35.0               | 242.441       | 15.186      | 582.457   | 1.875%      | 79.049%    |
| 36.0               | 237.582       | 15.284      | 597.741   | 1.887%      | 81.123%    |
| 37.0               | 233.102       | 15.351      | 613.092   | 1.895%      | 83.207%    |

| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 38.0               | 228.106       | 15.394      | 628.487   | 1.901%      | 85.296%    |
| 39.0               | 223.054       | 15.399      | 643.886   | 1.901%      | 87.386%    |
| 40.0               | 215.126       | 15.282      | 659.168   | 1.887%      | 89.460%    |
| 41.0               | 198.864       | 14.742      | 673.91    | 1.820%      | 91.461%    |
| 42.0               | 170.510       | 13.420      | 687.33    | 1.657%      | 93.282%    |
| 43.0               | 136.354       | 11.367      | 698.697   | 1.403%      | 94.825%    |
| 44.0               | 101.207       | 8.966       | 707.664   | 1.107%      | 96.042%    |
| 45.0               | 65.262        | 6.398       | 714.061   | .790%       | 96.910%    |
| 46.0               | 38.402        | 4.054       | 718.115   | .501%       | 97.460%    |
| 47.0               | 19.208        | 2.291       | 720.407   | .283%       | 97.771%    |
| 48.0               | 11.789        | 1.253       | 721.66    | .155%       | 97.941%    |
| 49.0               | 9.401         | 0.870       | 722.53    | .107%       | 98.059%    |
| 50.0               | 8.190         | 0.733       | 723.263   | .091%       | 98.159%    |
| 51.0               | 7.027         | 0.644       | 723.907   | .079%       | 98.246%    |
| 52.0               | 6.056         | 0.561       | 724.468   | .069%       | 98.322%    |
| 53.0               | 5.258         | 0.492       | 724.961   | .061%       | 98.389%    |
| 54.0               | 4.838         | 0.445       | 725.406   | .055%       | 98.450%    |
| 55.0               | 4.480         | 0.416       | 725.822   | .051%       | 98.506%    |
| 56.0               | 4.088         | 0.387       | 726.209   | .048%       | 98.559%    |
| 57.0               | 3.943         | 0.367       | 726.576   | .045%       | 98.608%    |
| 58.0               | 3.799         | 0.358       | 726.934   | .044%       | 98.657%    |
| 59.0               | 3.696         | 0.350       | 727.284   | .043%       | 98.705%    |
| 60.0               | 3.613         | 0.345       | 727.63    | .043%       | 98.751%    |
| 61.0               | 3.530         | 0.341       | 727.971   | .042%       | 98.798%    |
| 62.0               | 3.462         | 0.337       | 728.307   | .042%       | 98.843%    |
| 63.0               | 3.386         | 0.333       | 728.64    | .041%       | 98.889%    |
| 64.0               | 3.283         | 0.327       | 728.968   | .040%       | 98.933%    |
| 65.0               | 3.193         | 0.320       | 729.288   | .040%       | 98.976%    |
| 66.0               | 3.138         | 0.316       | 729.604   | .039%       | 99.019%    |
| 67.0               | 3.083         | 0.313       | 729.917   | .039%       | 99.062%    |
| 68.0               | 3.049         | 0.311       | 730.228   | .038%       | 99.104%    |
| 69.0               | 3.014         | 0.309       | 730.537   | .038%       | 99.146%    |
| 70.0               | 2.973         | 0.308       | 730.844   | .038%       | 99.188%    |
| 71.0               | 2.939         | 0.306       | 731.15    | .038%       | 99.229%    |
| 72.0               | 2.904         | 0.304       | 731.454   | .038%       | 99.270%    |
| 73.0               | 2.870         | 0.302       | 731.756   | .037%       | 99.311%    |
| 74.0               | 2.870         | 0.302       | 732.057   | .037%       | 99.352%    |
| 75.0               | 2.835         | 0.301       | 732.359   | .037%       | 99.393%    |

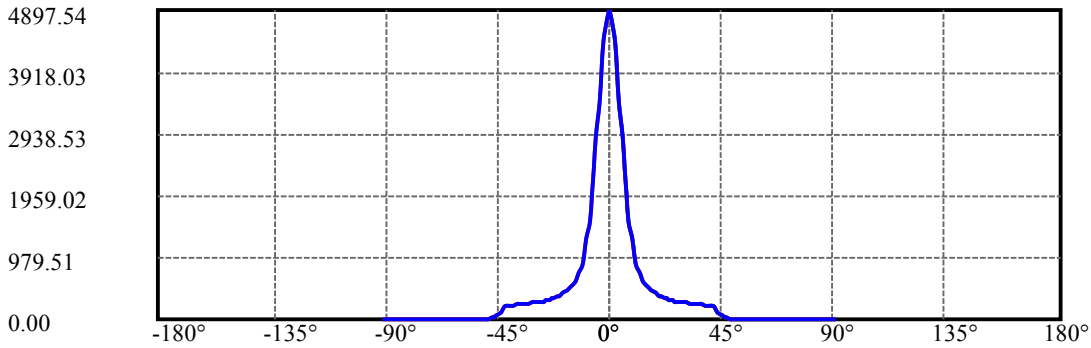
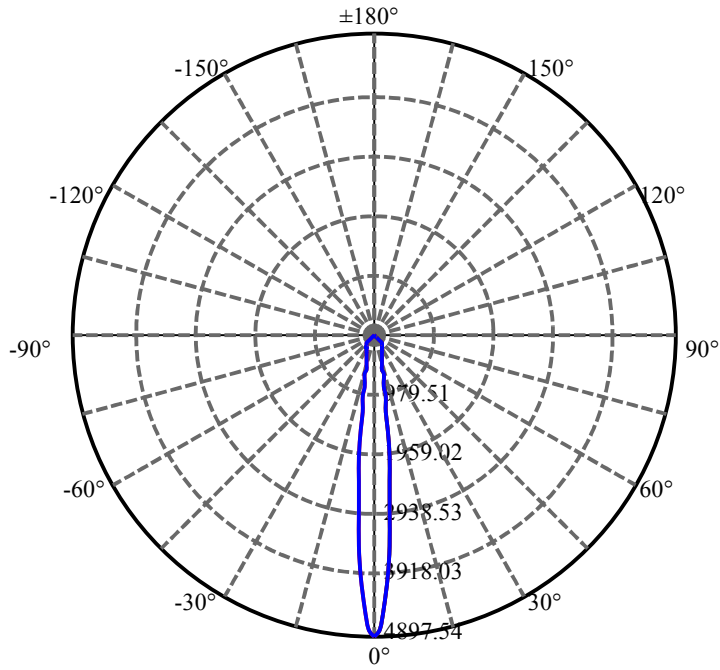
| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 76.0               | 2.829         | 0.301       | 732.659   | .037%       | 99.434%    |
| 77.0               | 2.822         | 0.301       | 732.961   | .037%       | 99.475%    |
| 78.0               | 2.794         | 0.301       | 733.261   | .037%       | 99.516%    |
| 79.0               | 2.780         | 0.300       | 733.561   | .037%       | 99.556%    |
| 80.0               | 2.760         | 0.299       | 733.86    | .037%       | 99.597%    |
| 81.0               | 2.753         | 0.298       | 734.158   | .037%       | 99.637%    |
| 82.0               | 2.746         | 0.298       | 734.456   | .037%       | 99.678%    |
| 83.0               | 2.739         | 0.298       | 734.754   | .037%       | 99.718%    |
| 84.0               | 2.732         | 0.298       | 735.052   | .037%       | 99.759%    |
| 85.0               | 2.725         | 0.298       | 735.35    | .037%       | 99.799%    |
| 86.0               | 2.712         | 0.297       | 735.647   | .037%       | 99.839%    |
| 87.0               | 2.698         | 0.296       | 735.943   | .037%       | 99.880%    |
| 88.0               | 2.698         | 0.296       | 736.239   | .036%       | 99.920%    |
| 89.0               | 2.698         | 0.296       | 736.534   | .037%       | 99.960%    |
| 90.0               | 2.691         | 0.295       | 736.83    | .036%       | 100.000%   |

ZONAL LUMEN SUMMARY

| Zone    | Lumens | %Lamp  | %Fixt   |
|---------|--------|--------|---------|
| 0-30    | 508.13 | 62.73% | 68.96%  |
| 0-40    | 659.17 | 81.38% | 89.46%  |
| 0-60    | 727.63 | 89.83% | 98.75%  |
| 0-90    | 736.53 | 90.93% | 99.96%  |
| 0-120   | 736.53 | 90.93% | 99.96%  |
| 0-180   | 736.83 | 90.97% | 100.00% |
| 60-90   | 9.25   | 1.14%  | 1.26%   |
| 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%   |
| 0-35.46 | 589.46 | 72.77% | 80.00%  |

ZONAL LUMEN SUMMARY

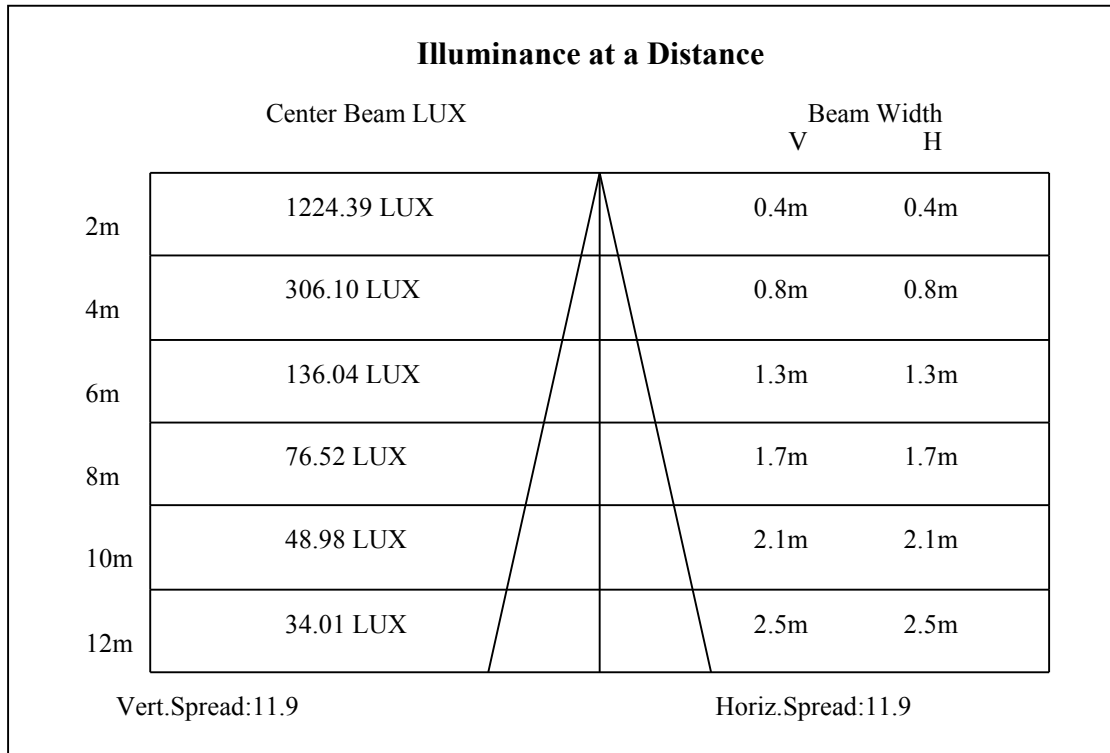
|         |        |
|---------|--------|
| 0-10    | 213.30 |
| 10-20   | 155.76 |
| 20-30   | 139.07 |
| 30-40   | 151.04 |
| 40-50   | 64.09  |
| 50-60   | 4.37   |
| 60-70   | 3.21   |
| 70-80   | 3.02   |
| 80-90   | 2.67   |
| 90-100  | 0.00   |
| 100-110 | 0.00   |
| 110-120 | 0.00   |
| 120-130 | 0.00   |
| 130-140 | 0.00   |
| 140-150 | 0.00   |
| 150-160 | 0.00   |
| 160-170 | 0.00   |
| 170-180 | 0.00   |

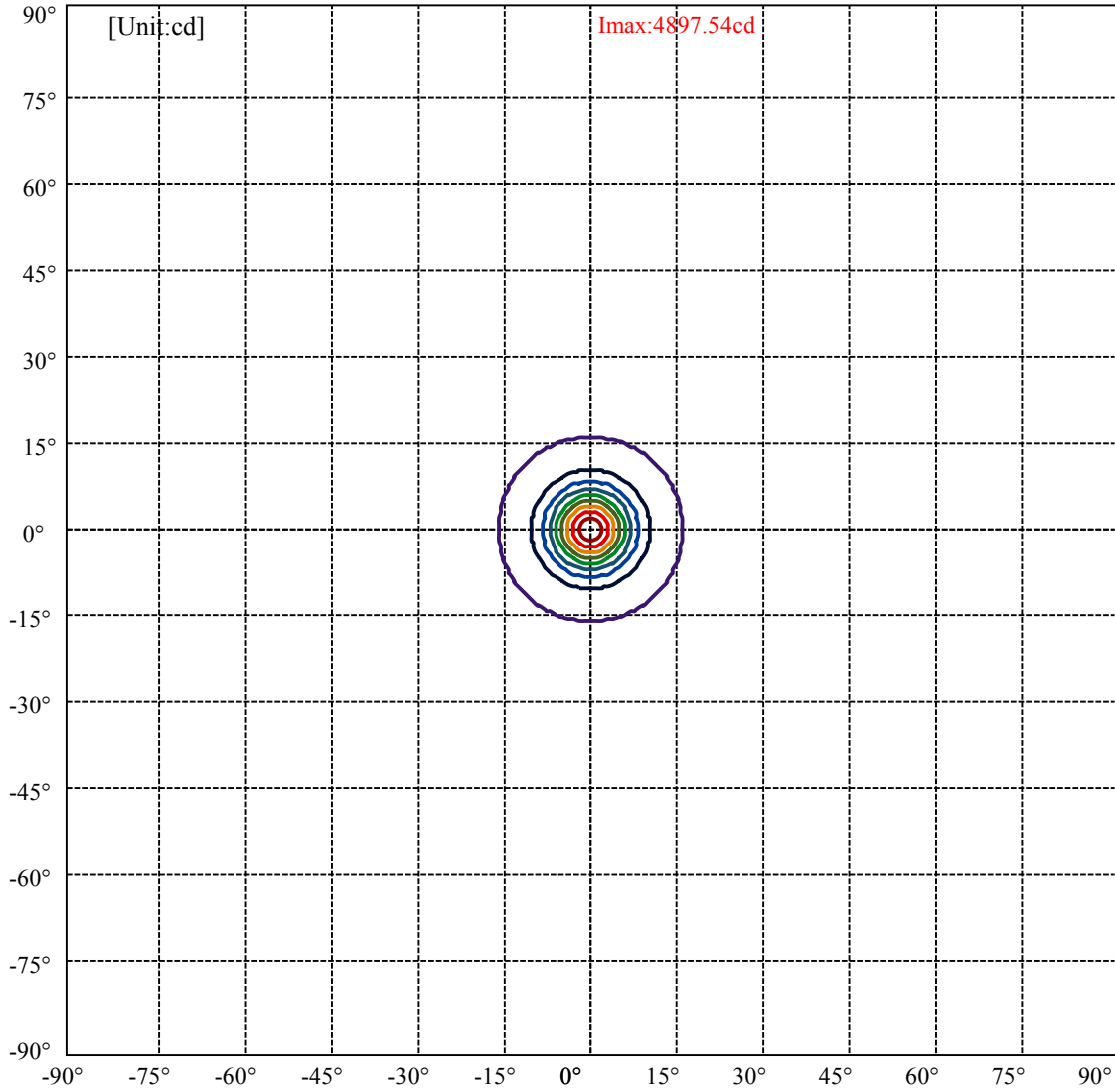


C0(Max): —————  
C0/C180: —————  
C90/C270: —————

Field angle(10%Imax):C0/180Left:15.9 Right:15.9  
:C90/270Left:15.9 Right:15.9

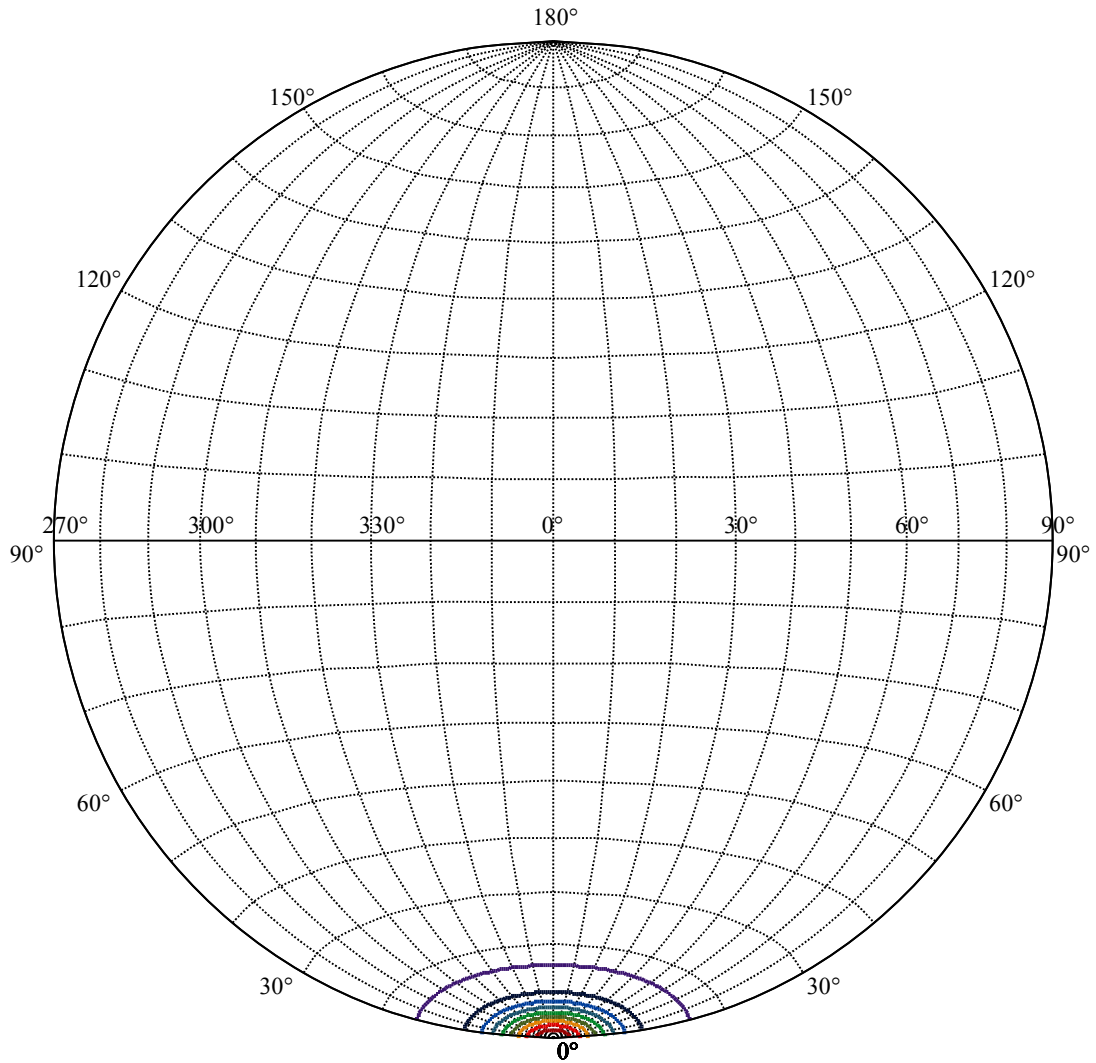
Beam Angle(50%Imax):C0/180Left:5.9 Right:5.9  
:C90/270Left:5.9 Right:5.9





|                                |   |
|--------------------------------|---|
| (10%I <sub>max</sub> ) 489.754 | — |
| (20%I <sub>max</sub> ) 979.508 | — |
| (30%I <sub>max</sub> ) 1469.26 | — |
| (40%I <sub>max</sub> ) 1959.02 | — |
| (50%I <sub>max</sub> ) 2448.77 | — |
| (60%I <sub>max</sub> ) 2938.53 | — |
| (70%I <sub>max</sub> ) 3428.28 | — |
| (80%I <sub>max</sub> ) 3918.03 | — |
| (90%I <sub>max</sub> ) 4407.79 | — |





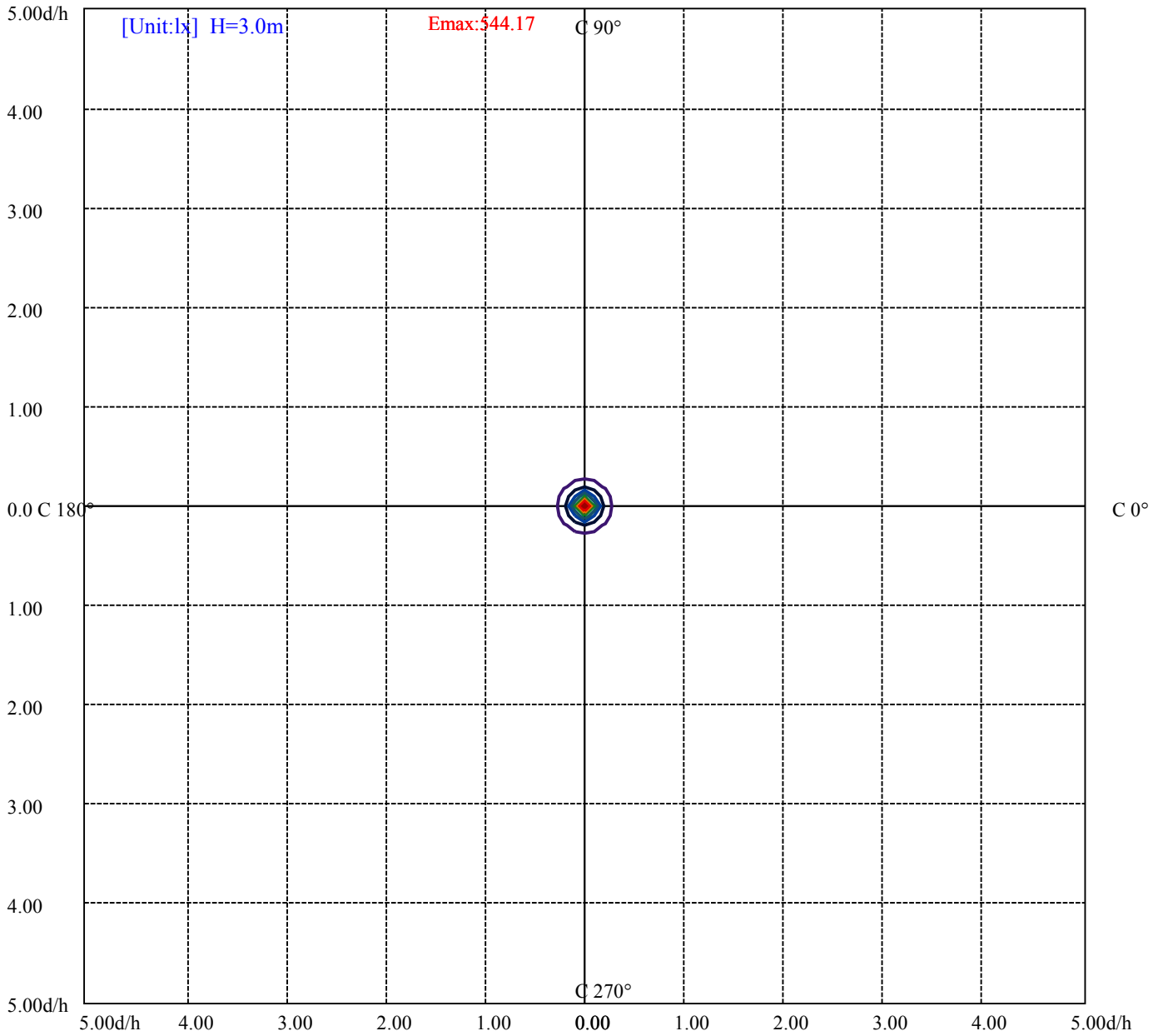
House

[Unit:cd]

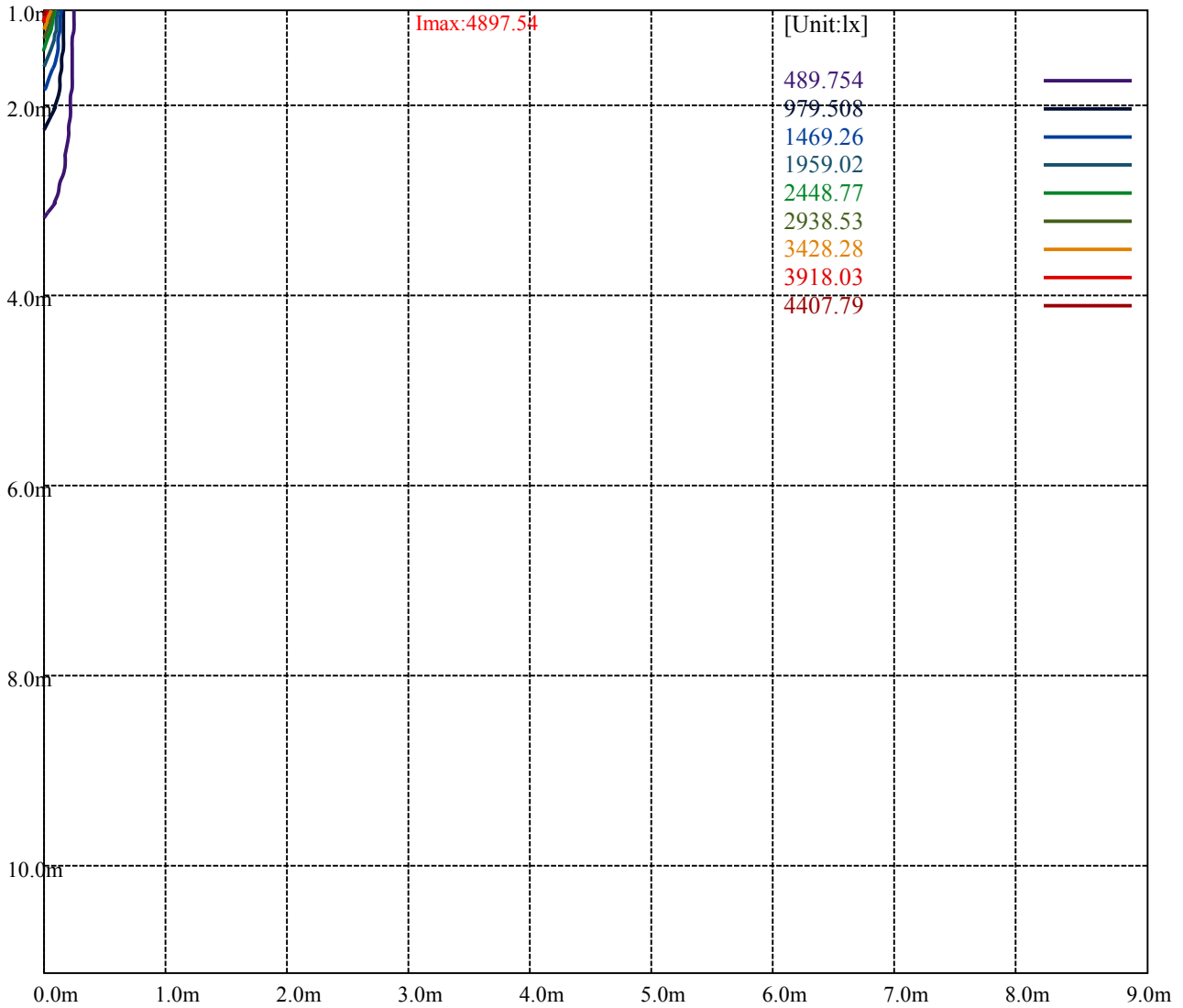
Road

Imax:4897.54

|                   |   |
|-------------------|---|
| (10%Imax) 489.754 | — |
| (20%Imax) 979.508 | — |
| (30%Imax) 1469.26 | — |
| (40%Imax) 1959.02 | — |
| (50%Imax) 2448.77 | — |
| (60%Imax) 2938.53 | — |
| (70%Imax) 3428.28 | — |
| (80%Imax) 3918.03 | — |
| (90%Imax) 4407.79 | — |



- (10%Emax) 54.41689
- (20%Emax) 108.8339
- (30%Emax) 163.2511
- (40%Emax) 217.6678
- (50%Emax) 272.0844
- (60%Emax) 326.5011
- (70%Emax) 380.9189
- (80%Emax) 435.3356
- (90%Emax) 489.7522



Luminance Table

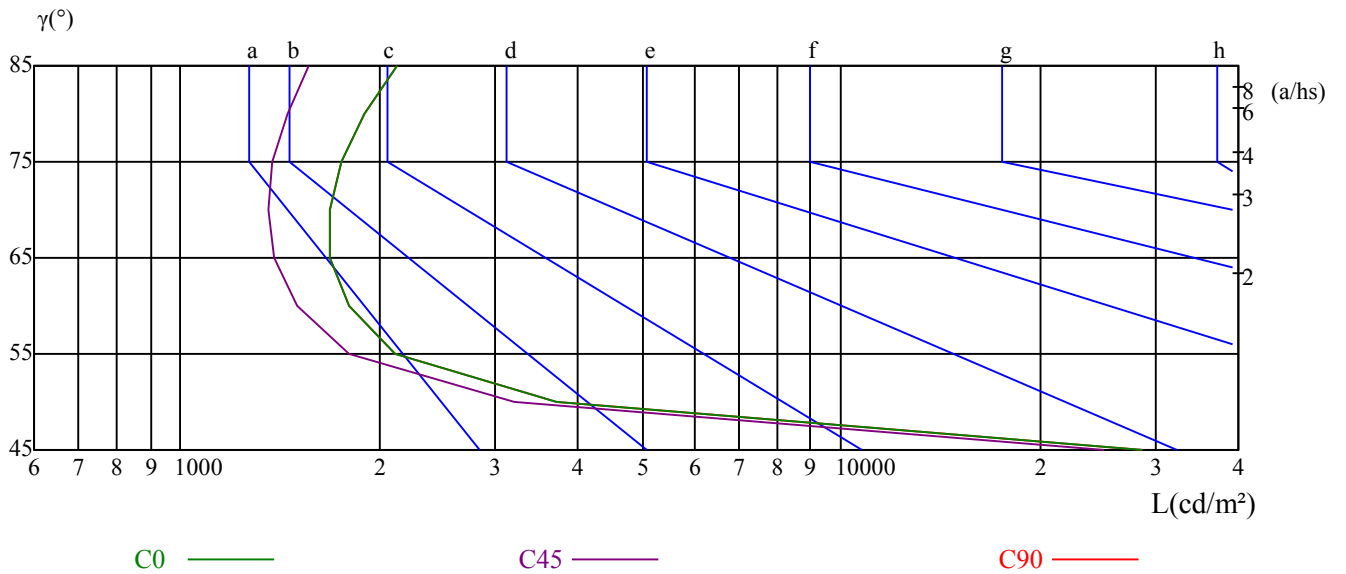
| $\gamma$ | 45    | 50   | 55   | 60   | 65   | 70   | 75   | 80   | 85   |
|----------|-------|------|------|------|------|------|------|------|------|
| C0       | 28663 | 3713 | 2115 | 1794 | 1685 | 1688 | 1757 | 1897 | 2122 |
| C45      | 25099 | 3204 | 1797 | 1499 | 1383 | 1357 | 1379 | 1449 | 1566 |
| C90      | 28663 | 3713 | 2115 | 1794 | 1685 | 1688 | 1757 | 1897 | 2122 |

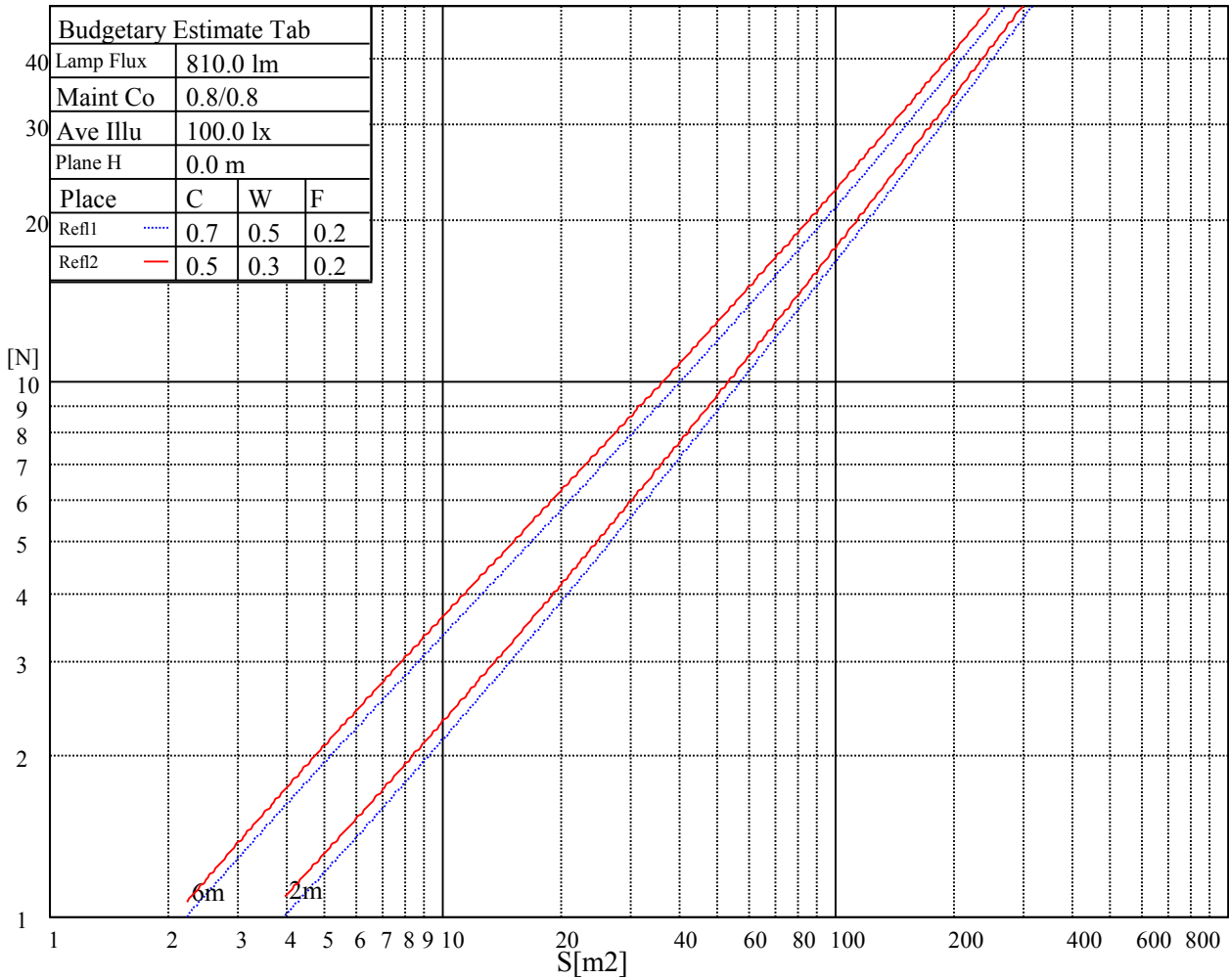
| L(Hor)(65) | L(Ver)(65) | L45(65) | L(Hor)(75) | L(Ver)(75) | L45(75) | L(Hor)(85) | L(Ver)(85) | L45(85) |
|------------|------------|---------|------------|------------|---------|------------|------------|---------|
| 3571       | 3571       | 3571    | 5177       | 5177       | 5177    | 14778      | 14778      | 14778   |

Glare Table

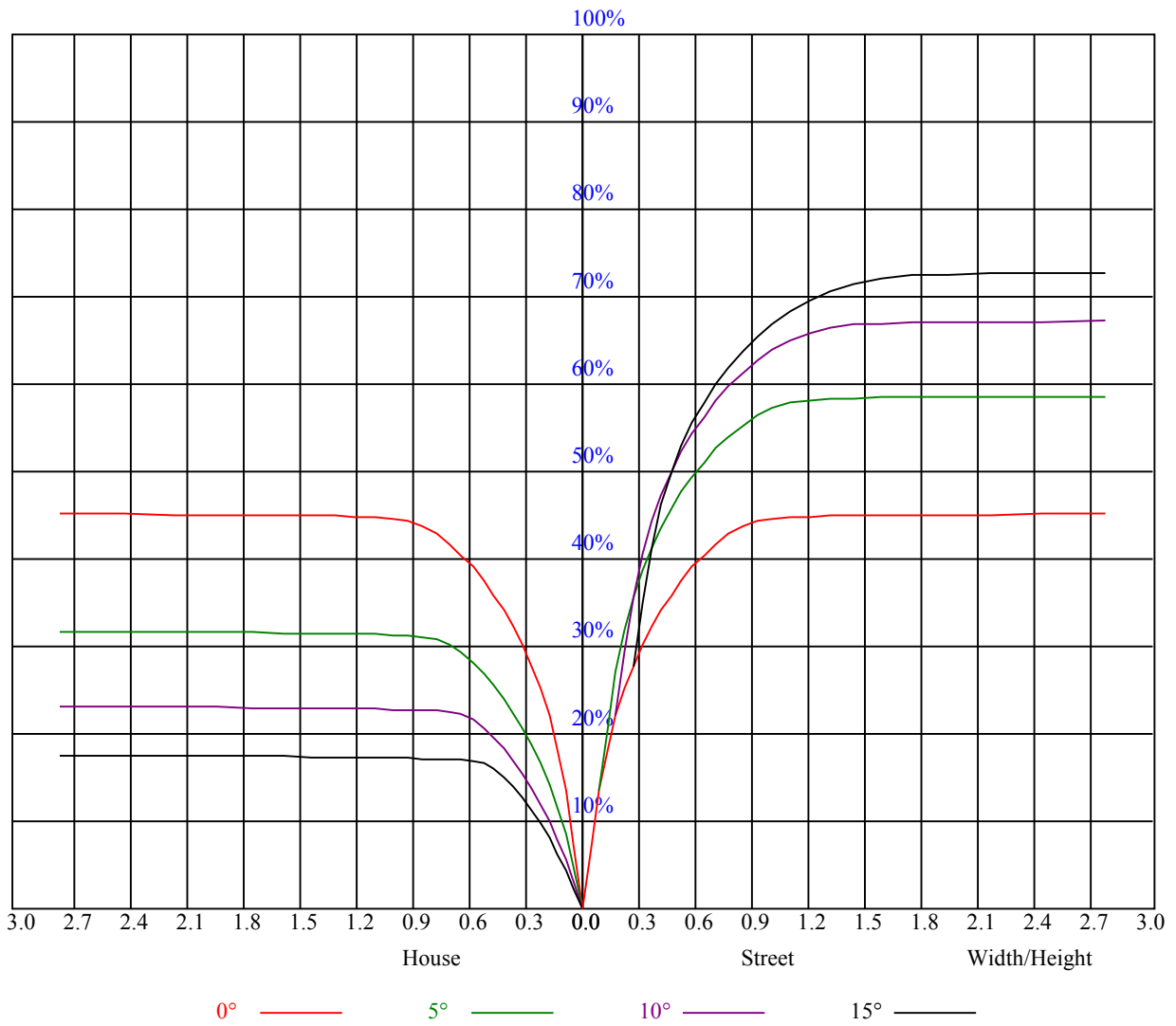
| Glare | Quality | Service Values Illuminance(lx) |      |      |       |       |       |       |       |
|-------|---------|--------------------------------|------|------|-------|-------|-------|-------|-------|
| 1.15  | A       | 2000                           | 1000 | 500  | <=300 |       |       |       |       |
| 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     | 1.08                                    | 1.08 | 1.08 | 1.06 | 1.06 | 1.06 | 1.01 | 1.01 | 1.01 | 0.97 | 0.97 | 0.97 | 0.93 | 0.93 | 0.93 | 0.91 |
| 1     | 1.01                                    | 0.99 | 0.97 | 0.99 | 0.97 | 0.95 | 0.95 | 0.94 | 0.93 | 0.92 | 0.91 | 0.90 | 0.89 | 0.88 | 0.87 | 0.86 |
| 2     | 0.95                                    | 0.91 | 0.88 | 0.93 | 0.90 | 0.87 | 0.90 | 0.88 | 0.85 | 0.87 | 0.85 | 0.84 | 0.85 | 0.83 | 0.82 | 0.80 |
| 3     | 0.89                                    | 0.85 | 0.81 | 0.88 | 0.84 | 0.81 | 0.85 | 0.82 | 0.79 | 0.83 | 0.80 | 0.78 | 0.81 | 0.79 | 0.77 | 0.76 |
| 4     | 0.84                                    | 0.79 | 0.76 | 0.83 | 0.79 | 0.75 | 0.81 | 0.77 | 0.74 | 0.79 | 0.76 | 0.73 | 0.77 | 0.75 | 0.73 | 0.71 |
| 5     | 0.79                                    | 0.74 | 0.71 | 0.78 | 0.74 | 0.71 | 0.77 | 0.73 | 0.70 | 0.75 | 0.72 | 0.69 | 0.74 | 0.71 | 0.69 | 0.67 |
| 6     | 0.75                                    | 0.70 | 0.67 | 0.75 | 0.70 | 0.67 | 0.73 | 0.69 | 0.66 | 0.72 | 0.68 | 0.66 | 0.71 | 0.68 | 0.65 | 0.64 |
| 7     | 0.72                                    | 0.67 | 0.63 | 0.71 | 0.66 | 0.63 | 0.70 | 0.66 | 0.63 | 0.69 | 0.65 | 0.62 | 0.68 | 0.65 | 0.62 | 0.61 |
| 8     | 0.68                                    | 0.63 | 0.60 | 0.68 | 0.63 | 0.60 | 0.67 | 0.63 | 0.60 | 0.66 | 0.62 | 0.59 | 0.65 | 0.62 | 0.59 | 0.58 |
| 9     | 0.65                                    | 0.61 | 0.57 | 0.65 | 0.60 | 0.57 | 0.64 | 0.60 | 0.57 | 0.63 | 0.60 | 0.57 | 0.63 | 0.59 | 0.57 | 0.56 |
| 10    | 0.63                                    | 0.58 | 0.55 | 0.62 | 0.58 | 0.55 | 0.62 | 0.57 | 0.55 | 0.61 | 0.57 | 0.54 | 0.60 | 0.57 | 0.54 | 0.53 |



Intensity data(cd)

|        |         |         |         |         |         |         |         |         |         |
|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| C/γ(°) | 0.0     | 1.0     | 2.0     | 3.0     | 4.0     | 5.0     | 6.0     | 7.0     | 8.0     |
| 0.0    | 4829.55 | 4906.08 | 4658.32 | 4276.78 | 3852.85 | 3150.88 | 2663.08 | 2272.18 | 1777.22 |
| 45.0   | 4896.72 | 4996.37 | 4802.02 | 4393.50 | 3909.00 | 3329.26 | 2762.18 | 2299.71 | 1896.69 |
| 90.0   | 4979.85 | 4963.89 | 4695.76 | 4233.29 | 3732.27 | 3157.48 | 2611.33 | 2176.38 | 1745.84 |
| 135.0  | 4884.05 | 4886.81 | 4609.32 | 4200.25 | 3726.77 | 3112.89 | 2642.16 | 2216.02 | 1795.39 |
| 180.0  | 4829.55 | 4559.22 | 4088.49 | 3547.83 | 3058.93 | 2593.71 | 2119.67 | 1696.29 | 1349.43 |
| 225.0  | 4896.72 | 4546.01 | 4085.18 | 3524.16 | 2954.88 | 2483.04 | 2060.76 | 1609.85 | 1217.30 |
| 270.0  | 4979.85 | 4753.57 | 4246.50 | 3741.08 | 3214.19 | 2643.81 | 2140.04 | 1746.94 | 1383.02 |
| 315.0  | 4884.05 | 4644.56 | 4188.69 | 3637.03 | 3134.91 | 2583.80 | 2136.74 | 1706.20 | 1245.93 |
| 360.0  | 4829.55 | 4906.08 | 4658.32 | 4276.78 | 3852.85 | 3150.88 | 2663.08 | 2272.18 | 1777.22 |
| C/γ(°) | 9.0     | 10.0    | 11.0    | 12.0    | 13.0    | 14.0    | 15.0    | 16.0    | 17.0    |
| 0.0    | 1406.14 | 1178.21 | 938.71  | 802.17  | 701.97  | 609.47  | 551.11  | 507.62  | 465.78  |
| 45.0   | 1467.80 | 1193.62 | 982.21  | 813.18  | 694.81  | 616.08  | 550.01  | 498.81  | 465.23  |
| 90.0   | 1423.76 | 1086.04 | 929.90  | 796.01  | 685.18  | 601.99  | 545.11  | 502.50  | 460.71  |
| 135.0  | 1443.03 | 1187.57 | 969.54  | 813.18  | 709.68  | 624.34  | 567.08  | 516.43  | 475.14  |
| 180.0  | 1080.98 | 906.50  | 775.80  | 666.73  | 595.27  | 534.65  | 488.68  | 456.91  | 430.87  |
| 225.0  | 1076.85 | 853.81  | 751.91  | 660.90  | 584.48  | 531.84  | 496.33  | 460.44  | 433.35  |
| 270.0  | 1107.18 | 927.15  | 781.80  | 685.45  | 602.87  | 543.41  | 501.56  | 467.98  | 432.74  |
| 315.0  | 1096.72 | 896.43  | 746.73  | 666.90  | 598.08  | 533.28  | 495.73  | 463.96  | 433.29  |
| 360.0  | 1406.14 | 1178.21 | 938.71  | 802.17  | 701.97  | 609.47  | 551.11  | 507.62  | 465.78  |
| C/γ(°) | 18.0    | 19.0    | 20.0    | 21.0    | 22.0    | 23.0    | 24.0    | 25.0    | 26.0    |
| 0.0    | 439.90  | 417.33  | 390.90  | 370.53  | 351.81  | 331.44  | 313.27  | 300.61  | 288.50  |
| 45.0   | 434.39  | 410.72  | 388.15  | 367.78  | 351.81  | 333.09  | 314.37  | 301.71  | 292.90  |
| 90.0   | 434.45  | 411.60  | 385.62  | 364.69  | 345.92  | 322.69  | 306.77  | 294.83  | 283.82  |
| 135.0  | 447.06  | 423.38  | 393.10  | 372.18  | 352.36  | 329.79  | 312.72  | 300.06  | 288.50  |
| 180.0  | 402.41  | 381.82  | 362.44  | 338.93  | 321.31  | 307.82  | 295.16  | 286.24  | 280.29  |
| 225.0  | 408.30  | 385.89  | 363.81  | 340.63  | 320.48  | 306.50  | 294.55  | 285.80  | 278.70  |
| 270.0  | 409.07  | 388.70  | 363.92  | 343.55  | 326.48  | 312.17  | 300.61  | 292.90  | 286.84  |
| 315.0  | 407.80  | 388.15  | 365.63  | 344.98  | 327.81  | 312.00  | 300.28  | 290.20  | 283.65  |
| 360.0  | 439.90  | 417.33  | 390.90  | 370.53  | 351.81  | 331.44  | 313.27  | 300.61  | 288.50  |
| C/γ(°) | 27.0    | 28.0    | 29.0    | 30.0    | 31.0    | 32.0    | 33.0    | 34.0    | 35.0    |
| 0.0    | 280.24  | 279.14  | 267.85  | 263.55  | 259.10  | 255.41  | 251.66  | 248.14  | 244.45  |
| 45.0   | 283.54  | 278.59  | 278.03  | 266.25  | 261.79  | 257.28  | 253.48  | 249.08  | 245.61  |
| 90.0   | 278.31  | 272.69  | 266.09  | 262.78  | 258.32  | 253.59  | 249.85  | 246.60  | 242.03  |
| 135.0  | 281.34  | 278.03  | 269.23  | 265.26  | 260.69  | 256.40  | 252.54  | 248.08  | 244.23  |
| 180.0  | 276.05  | 269.67  | 265.59  | 261.24  | 257.39  | 252.93  | 249.19  | 245.39  | 241.20  |
| 225.0  | 274.62  | 269.23  | 264.11  | 260.42  | 256.45  | 252.32  | 248.41  | 244.95  | 239.83  |
| 270.0  | 280.79  | 278.03  | 268.90  | 264.11  | 258.99  | 256.07  | 251.00  | 247.20  | 243.07  |
| 315.0  | 277.43  | 272.42  | 265.81  | 260.91  | 256.56  | 252.60  | 247.53  | 242.96  | 239.11  |
| 360.0  | 280.24  | 279.14  | 267.85  | 263.55  | 259.10  | 255.41  | 251.66  | 248.14  | 244.45  |
| C/γ(°) | 36.0    | 37.0    | 38.0    | 39.0    | 40.0    | 41.0    | 42.0    | 43.0    | 44.0    |
| 0.0    | 240.71  | 236.58  | 231.51  | 227.38  | 223.42  | 211.42  | 185.71  | 156.14  | 117.05  |
| 45.0   | 240.93  | 236.85  | 232.23  | 227.60  | 223.20  | 215.05  | 194.07  | 161.26  | 127.35  |
| 90.0   | 237.73  | 233.44  | 228.15  | 223.53  | 219.45  | 208.28  | 186.75  | 152.45  | 115.67  |
| 135.0  | 240.16  | 236.47  | 230.58  | 226.17  | 221.66  | 213.51  | 189.06  | 158.18  | 125.47  |
| 180.0  | 235.48  | 231.35  | 227.16  | 222.43  | 212.79  | 192.37  | 158.73  | 119.91  | 83.58   |
| 225.0  | 235.26  | 230.69  | 225.46  | 220.45  | 208.39  | 182.40  | 153.00  | 114.08  | 74.49   |
| 270.0  | 237.68  | 232.17  | 227.27  | 221.38  | 210.15  | 189.28  | 152.51  | 120.52  | 89.47   |
| 315.0  | 232.72  | 227.27  | 222.48  | 215.49  | 201.95  | 178.60  | 144.25  | 108.30  | 76.58   |
| 360.0  | 240.71  | 236.58  | 231.51  | 227.38  | 223.42  | 211.42  | 185.71  | 156.14  | 117.05  |



Intensity data(cd)

|        |       |       |       |       |       |      |      |      |      |
|--------|-------|-------|-------|-------|-------|------|------|------|------|
| C/γ(°) | 45.0  | 46.0  | 47.0  | 48.0  | 49.0  | 50.0 | 51.0 | 52.0 | 53.0 |
| 0.0    | 77.30 | 48.56 | 22.19 | 11.40 | 9.08  | 8.09 | 7.16 | 6.22 | 5.18 |
| 45.0   | 82.97 | 53.62 | 28.90 | 15.53 | 9.80  | 8.97 | 7.98 | 6.88 | 5.95 |
| 90.0   | 84.68 | 54.12 | 25.16 | 13.27 | 10.24 | 8.97 | 7.76 | 6.61 | 5.56 |
| 135.0  | 84.35 | 53.24 | 29.01 | 14.42 | 10.68 | 9.58 | 8.04 | 6.83 | 5.78 |
| 180.0  | 49.61 | 25.66 | 12.88 | 10.35 | 9.14  | 7.76 | 6.50 | 5.67 | 5.18 |
| 225.0  | 45.53 | 22.68 | 11.18 | 9.97  | 8.75  | 7.21 | 6.11 | 5.23 | 4.68 |
| 270.0  | 54.56 | 27.03 | 13.54 | 10.13 | 9.14  | 7.76 | 6.61 | 5.73 | 5.01 |
| 315.0  | 43.11 | 22.30 | 10.79 | 9.25  | 8.37  | 7.16 | 6.06 | 5.29 | 4.73 |
| 360.0  | 77.30 | 48.56 | 22.19 | 11.40 | 9.08  | 8.09 | 7.16 | 6.22 | 5.18 |

|        |      |      |      |      |      |      |      |      |      |
|--------|------|------|------|------|------|------|------|------|------|
| C/γ(°) | 54.0 | 55.0 | 56.0 | 57.0 | 58.0 | 59.0 | 60.0 | 61.0 | 62.0 |
| 0.0    | 4.62 | 4.35 | 3.96 | 3.80 | 3.69 | 3.58 | 3.52 | 3.47 | 3.36 |
| 45.0   | 5.34 | 4.90 | 4.51 | 4.29 | 3.80 | 3.69 | 3.63 | 3.52 | 3.47 |
| 90.0   | 4.90 | 4.51 | 4.07 | 3.96 | 3.85 | 3.74 | 3.69 | 3.58 | 3.52 |
| 135.0  | 5.12 | 4.79 | 4.24 | 4.07 | 3.96 | 3.91 | 3.74 | 3.69 | 3.58 |
| 180.0  | 4.90 | 4.68 | 4.07 | 3.91 | 3.80 | 3.69 | 3.63 | 3.52 | 3.47 |
| 225.0  | 4.51 | 4.07 | 3.96 | 3.85 | 3.74 | 3.63 | 3.52 | 3.47 | 3.41 |
| 270.0  | 4.79 | 4.46 | 4.07 | 3.91 | 3.85 | 3.74 | 3.63 | 3.58 | 3.47 |
| 315.0  | 4.51 | 4.07 | 3.80 | 3.74 | 3.69 | 3.58 | 3.52 | 3.41 | 3.41 |
| 360.0  | 4.62 | 4.35 | 3.96 | 3.80 | 3.69 | 3.58 | 3.52 | 3.47 | 3.36 |

|        |      |      |      |      |      |      |      |      |      |
|--------|------|------|------|------|------|------|------|------|------|
| C/γ(°) | 63.0 | 64.0 | 65.0 | 66.0 | 67.0 | 68.0 | 69.0 | 70.0 | 71.0 |
| 0.0    | 3.30 | 3.25 | 3.14 | 3.08 | 3.03 | 3.03 | 2.97 | 2.97 | 2.92 |
| 45.0   | 3.41 | 3.30 | 3.30 | 3.25 | 3.19 | 3.14 | 3.08 | 3.03 | 2.97 |
| 90.0   | 3.41 | 3.36 | 3.30 | 3.25 | 3.19 | 3.14 | 3.08 | 3.03 | 2.97 |
| 135.0  | 3.52 | 3.41 | 3.36 | 3.25 | 3.19 | 3.14 | 3.14 | 3.08 | 3.03 |
| 180.0  | 3.36 | 3.30 | 3.19 | 3.14 | 3.08 | 3.08 | 3.03 | 2.97 | 2.97 |
| 225.0  | 3.30 | 3.19 | 3.08 | 3.08 | 3.03 | 2.97 | 2.97 | 2.92 | 2.92 |
| 270.0  | 3.41 | 3.25 | 3.08 | 3.03 | 2.97 | 2.97 | 2.92 | 2.92 | 2.86 |
| 315.0  | 3.36 | 3.19 | 3.08 | 3.03 | 2.97 | 2.92 | 2.92 | 2.86 | 2.86 |
| 360.0  | 3.30 | 3.25 | 3.14 | 3.08 | 3.03 | 3.03 | 2.97 | 2.97 | 2.92 |

|        |      |      |      |      |      |      |      |      |      |
|--------|------|------|------|------|------|------|------|------|------|
| C/γ(°) | 72.0 | 73.0 | 74.0 | 75.0 | 76.0 | 77.0 | 78.0 | 79.0 | 80.0 |
| 0.0    | 2.92 | 2.86 | 2.86 | 2.81 | 2.81 | 2.81 | 2.81 | 2.75 | 2.75 |
| 45.0   | 2.97 | 2.92 | 2.92 | 2.86 | 2.86 | 2.86 | 2.81 | 2.81 | 2.81 |
| 90.0   | 2.92 | 2.92 | 2.92 | 2.86 | 2.86 | 2.86 | 2.81 | 2.81 | 2.75 |
| 135.0  | 2.97 | 2.92 | 2.92 | 2.92 | 2.86 | 2.86 | 2.81 | 2.81 | 2.75 |
| 180.0  | 2.92 | 2.86 | 2.86 | 2.81 | 2.81 | 2.81 | 2.81 | 2.75 | 2.75 |
| 225.0  | 2.86 | 2.86 | 2.86 | 2.81 | 2.81 | 2.81 | 2.75 | 2.81 | 2.75 |
| 270.0  | 2.86 | 2.81 | 2.81 | 2.81 | 2.81 | 2.81 | 2.81 | 2.75 | 2.75 |
| 315.0  | 2.81 | 2.81 | 2.81 | 2.81 | 2.81 | 2.75 | 2.75 | 2.75 | 2.75 |
| 360.0  | 2.92 | 2.86 | 2.86 | 2.81 | 2.81 | 2.81 | 2.81 | 2.75 | 2.75 |

|        |      |      |      |      |      |      |      |      |      |
|--------|------|------|------|------|------|------|------|------|------|
| C/γ(°) | 81.0 | 82.0 | 83.0 | 84.0 | 85.0 | 86.0 | 87.0 | 88.0 | 89.0 |
| 0.0    | 2.75 | 2.75 | 2.75 | 2.70 | 2.70 | 2.70 | 2.70 | 2.70 | 2.70 |
| 45.0   | 2.75 | 2.75 | 2.75 | 2.75 | 2.75 | 2.70 | 2.70 | 2.70 | 2.70 |
| 90.0   | 2.75 | 2.75 | 2.75 | 2.75 | 2.70 | 2.70 | 2.70 | 2.70 | 2.70 |
| 135.0  | 2.75 | 2.75 | 2.75 | 2.75 | 2.75 | 2.75 | 2.70 | 2.70 | 2.70 |
| 180.0  | 2.75 | 2.70 | 2.70 | 2.70 | 2.70 | 2.70 | 2.70 | 2.70 | 2.70 |
| 225.0  | 2.75 | 2.75 | 2.75 | 2.75 | 2.75 | 2.70 | 2.70 | 2.70 | 2.70 |
| 270.0  | 2.75 | 2.75 | 2.75 | 2.75 | 2.75 | 2.75 | 2.70 | 2.70 | 2.70 |
| 315.0  | 2.75 | 2.75 | 2.70 | 2.70 | 2.70 | 2.70 | 2.70 | 2.70 | 2.70 |
| 360.0  | 2.75 | 2.75 | 2.75 | 2.70 | 2.70 | 2.70 | 2.70 | 2.70 | 2.70 |

Intensity data(cd)

|        |      |
|--------|------|
| C/γ(°) | 90.0 |
| 0.0    | 2.70 |
| 45.0   | 2.70 |
| 90.0   | 2.70 |
| 135.0  | 2.64 |
| 180.0  | 2.70 |
| 225.0  | 2.70 |
| 270.0  | 2.70 |
| 315.0  | 2.70 |
| 360.0  | 2.70 |