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## Nata

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LumCAT: 1652-S  
Luminaire: 92.70.043.00  
Report No: NATA0100  
Test No: GC20190904  
LampCAT: XICATO XOB LES 6MM  
Lamp flux(lm): 706.3  
Number of Lamps: 1  
Length(mm): 22.6  
Phm Type: C

Voltage(V): 31.7300  
Current(A): 0.1970  
Power (W): 6.2500  
PF: 0.0000  
Ballast type: DC  
Width(mm): 22.6  
Height(mm): 0

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## Photometric Results

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Lumens(lm): 639.24  
Efficiency(%): 90.51%  
Lumens(lm)/Power(W): 102.28  
Central intensity(cd): 1041.398  
Maximum intensity(cd): 1041.398  
Angle of maximum intensity: C=0.0  $\gamma$ =0.0  
Beam Angle(50%Imax): [C0/180]Total=41.4  
                                  [C90/270]Total=41.4  
Field angle(10%Imax): [C0/180]Total=80.6  
                                  [C90/270]Total=80.6  
Maximum s/h(1/2): C0\_180=0.67 C90\_270=0.67  
Maximum s/h(1/4): C0\_180=0.66 C90\_270=0.66  
Up flux rate of lamp(%): 0.00%  
Down flux rate of lamp(%): 90.51%  
Up flux rate of LUM(%): - -  
Down flux rate of LUM(%): 100.00%  
CIE Type : Direct lighting  
Output flux ratio in  $\pi$  solid angle : 98.041%

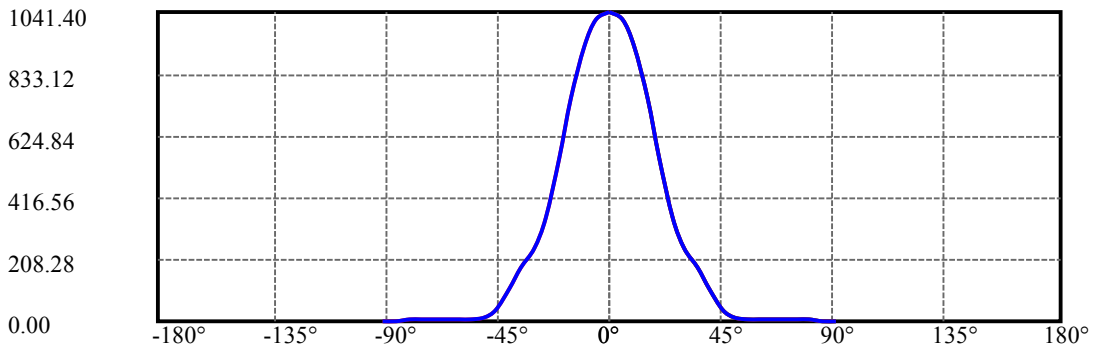
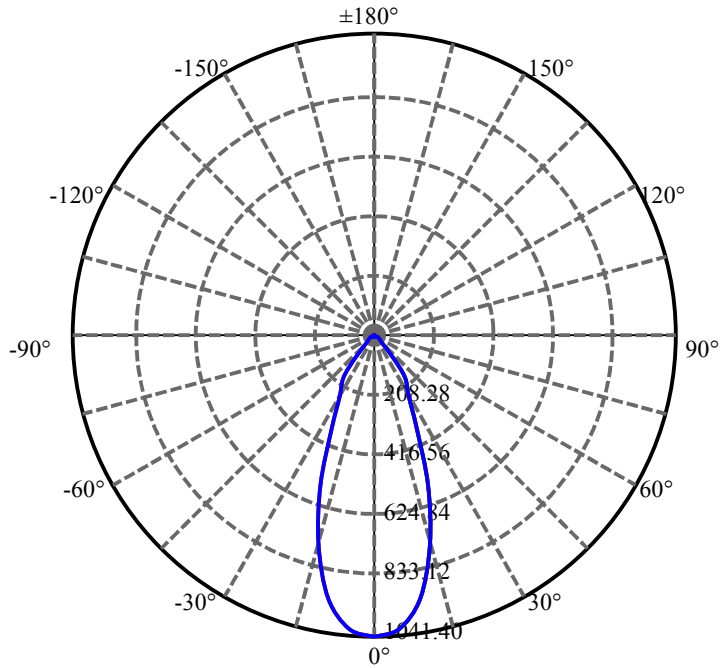
| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 0.0                | 1041.398      | 0.000       | 0         | .000%       | .000%      |
| 5.0                | 1017.077      | 24.608      | 24.608    | 3.484%      | 3.850%     |
| 10.0               | 921.797       | 69.360      | 93.968    | 9.821%      | 14.700%    |
| 15.0               | 749.468       | 99.138      | 193.106   | 14.037%     | 30.209%    |
| 20.0               | 548.536       | 106.974     | 300.08    | 15.146%     | 46.943%    |
| 25.0               | 352.519       | 94.504      | 394.584   | 13.381%     | 61.727%    |
| 30.0               | 244.526       | 75.556      | 470.141   | 10.698%     | 73.547%    |
| 35.0               | 180.893       | 62.646      | 532.787   | 8.870%      | 83.347%    |
| 40.0               | 108.070       | 48.211      | 580.998   | 6.826%      | 90.889%    |
| 45.0               | 38.616        | 27.160      | 608.158   | 3.846%      | 95.138%    |
| 50.0               | 13.866        | 10.605      | 618.763   | 1.501%      | 96.797%    |
| 55.0               | 7.945         | 4.742       | 623.505   | .671%       | 97.539%    |
| 60.0               | 5.934         | 3.208       | 626.713   | .454%       | 98.041%    |
| 65.0               | 4.901         | 2.634       | 629.347   | .373%       | 98.453%    |
| 70.0               | 4.317         | 2.334       | 631.681   | .330%       | 98.818%    |
| 75.0               | 3.818         | 2.126       | 633.808   | .301%       | 99.151%    |
| 80.0               | 3.466         | 1.949       | 635.757   | .276%       | 99.456%    |
| 85.0               | 3.206         | 1.813       | 637.57    | .257%       | 99.739%    |
| 90.0               | 2.883         | 1.667       | 639.237   | .236%       | 100.000%   |

ZONAL LUMEN SUMMARY

| Zone    | Lumens | %Lamp  | %Fixt   |
|---------|--------|--------|---------|
| 0-30    | 470.14 | 66.57% | 73.55%  |
| 0-40    | 581.00 | 82.26% | 90.89%  |
| 0-60    | 626.71 | 88.74% | 98.04%  |
| 0-90    | 637.57 | 90.27% | 99.74%  |
| 0-120   | 637.57 | 90.27% | 99.74%  |
| 0-180   | 639.24 | 90.51% | 100.00% |
| 60-90   | 14.06  | 1.99%  | 2.20%   |
| 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%   |
| 0-33.29 | 511.39 | 72.41% | 80.00%  |

ZONAL LUMEN SUMMARY

|         |        |
|---------|--------|
| 0-10    | 93.97  |
| 10-20   | 206.11 |
| 20-30   | 170.06 |
| 30-40   | 110.86 |
| 40-50   | 37.76  |
| 50-60   | 7.95   |
| 60-70   | 4.97   |
| 70-80   | 4.08   |
| 80-90   | 1.81   |
| 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   |



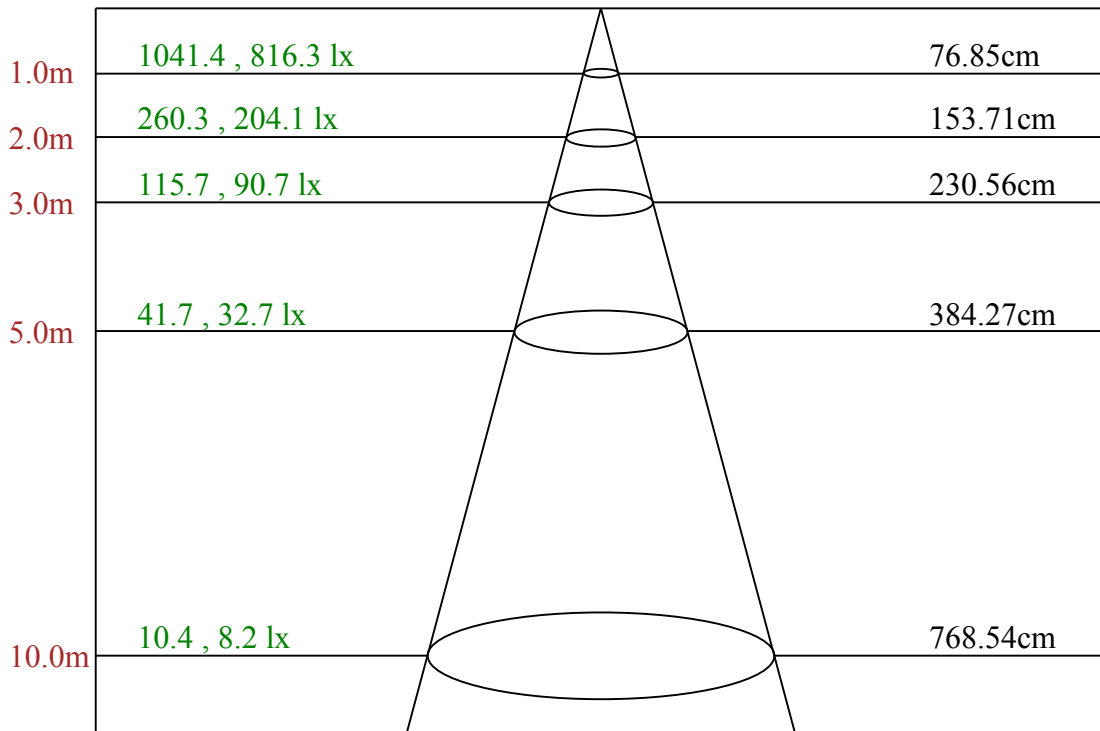
C0(Max): —————

C0/C180: —————

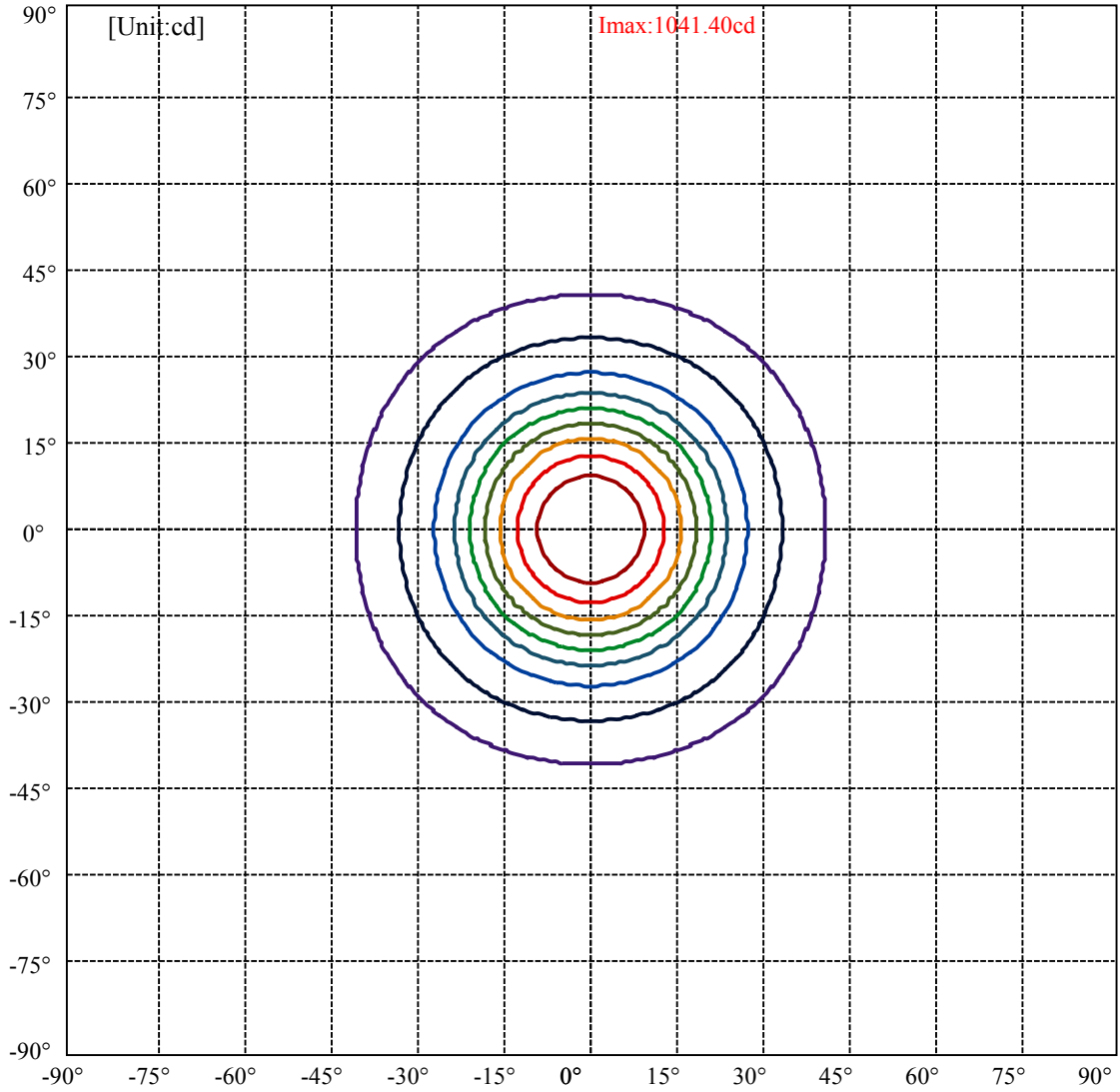
C90/C270: —————

Field angle(10%Imax):C0/180Left:40.3 Right:40.3  
:C90/270Left:40.3 Right:40.3

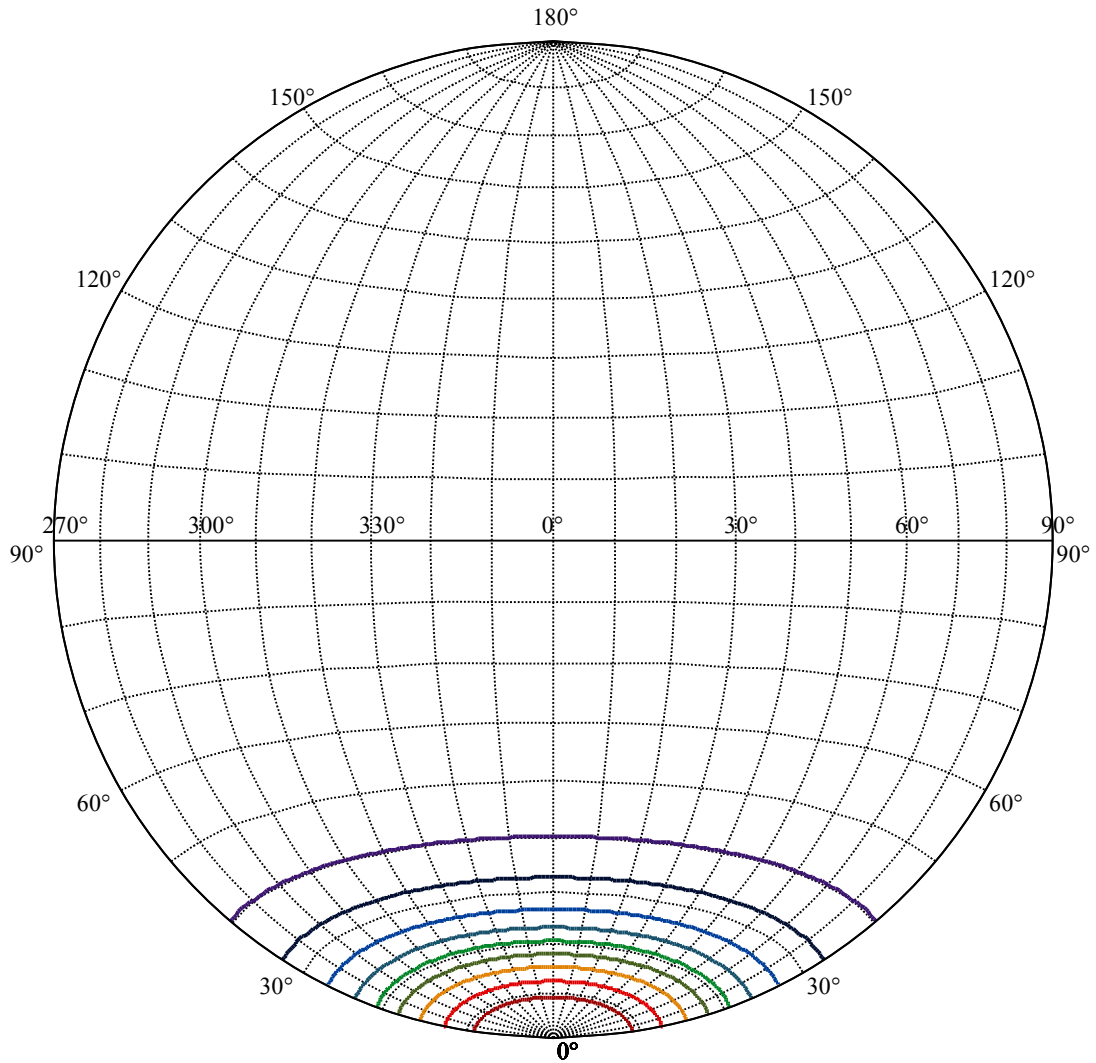
Beam Angle(50%Imax):C0/180Left:20.7 Right:20.7  
:C90/270Left:20.7 Right:20.7



Max , Ave      Beam angle of C0 plane 42.04



|                   |   |
|-------------------|---|
| (10%Imax) 104.14  | — |
| (20%Imax) 208.28  | — |
| (30%Imax) 312.42  | — |
| (40%Imax) 416.559 | — |
| (50%Imax) 520.699 | — |
| (60%Imax) 624.839 | — |
| (70%Imax) 728.979 | — |
| (80%Imax) 833.119 | — |
| (90%Imax) 937.259 | — |



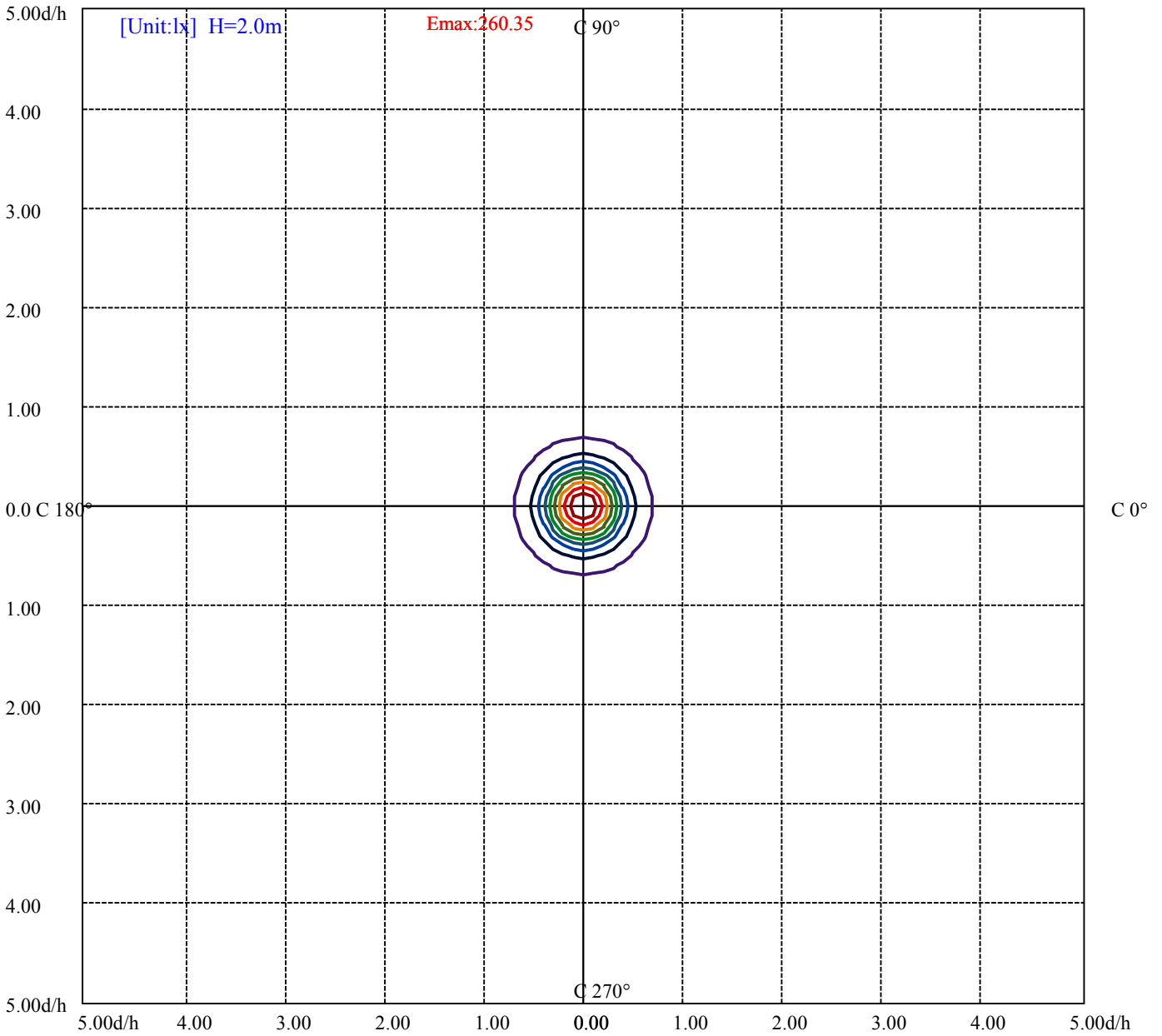
House

[Unit:cd]

Road

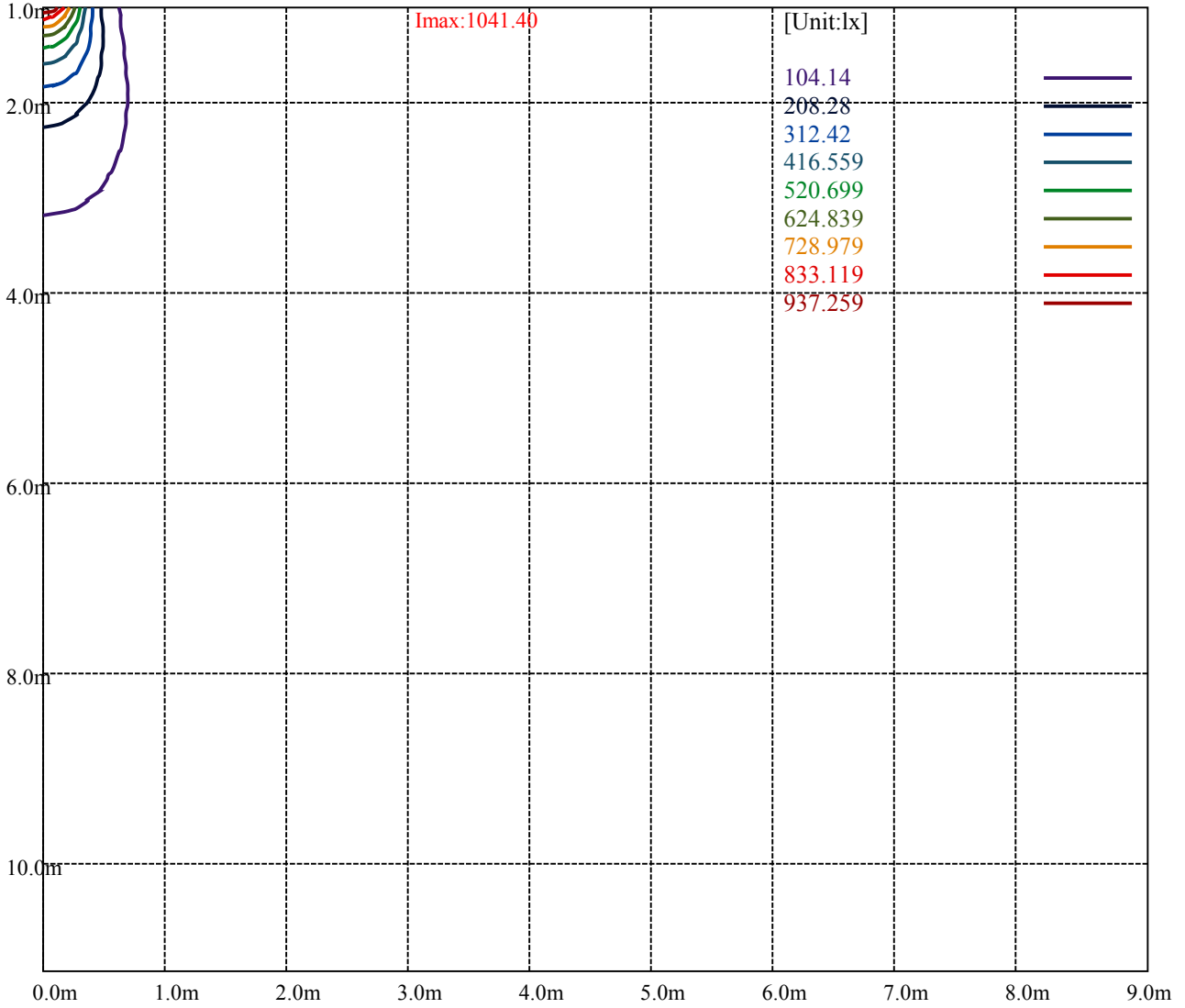
Imax:1041.40

|                   |   |
|-------------------|---|
| (10%Imax) 104.14  | — |
| (20%Imax) 208.28  | — |
| (30%Imax) 312.42  | — |
| (40%Imax) 416.559 | — |
| (50%Imax) 520.699 | — |
| (60%Imax) 624.839 | — |
| (70%Imax) 728.979 | — |
| (80%Imax) 833.119 | — |
| (90%Imax) 937.259 | — |



|                    |   |
|--------------------|---|
| (10%Emax) 26.035   | — |
| (20%Emax) 52.07    | — |
| (30%Emax) 78.10475 | — |
| (40%Emax) 104.1397 | — |
| (50%Emax) 130.1747 | — |
| (60%Emax) 156.2097 | — |
| (70%Emax) 182.2445 | — |
| (80%Emax) 208.2795 | — |
| (90%Emax) 234.3145 | — |





Luminance Table

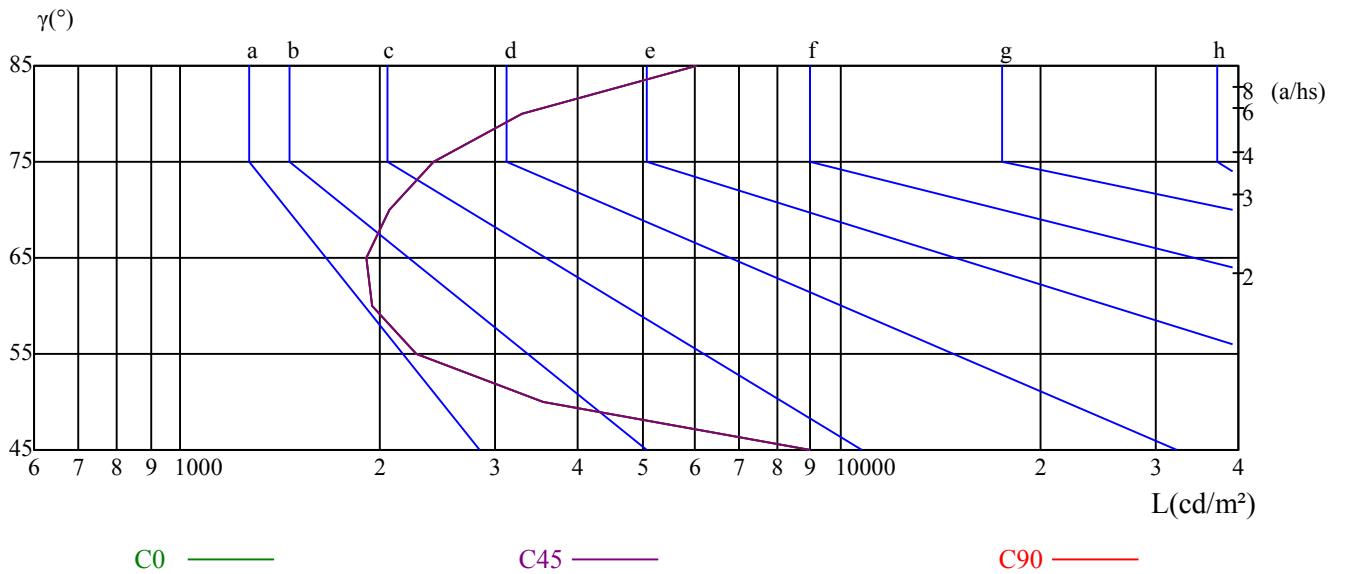
| $\gamma$ | 45   | 50   | 55   | 60   | 65   | 70   | 75   | 80   | 85   |
|----------|------|------|------|------|------|------|------|------|------|
| C0       | 8976 | 3546 | 2277 | 1951 | 1906 | 2075 | 2425 | 3281 | 6047 |
| C45      | 8976 | 3546 | 2277 | 1951 | 1906 | 2075 | 2425 | 3281 | 6047 |
| C90      | 8976 | 3546 | 2277 | 1951 | 1906 | 2075 | 2425 | 3281 | 6047 |

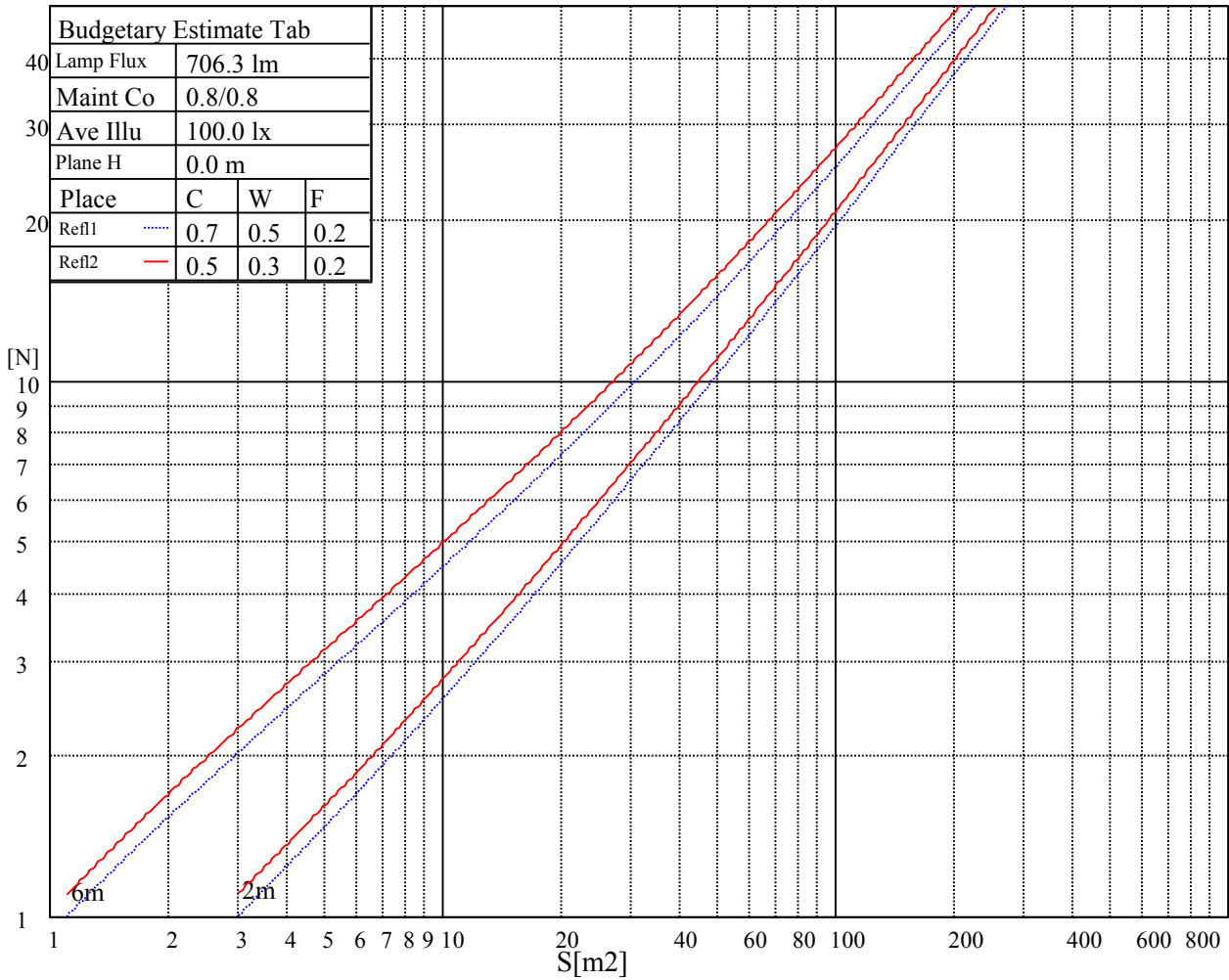
| L(Hor)(65) | L(Ver)(65) | L45(65) | L(Hor)(75) | L(Ver)(75) | L45(75) | L(Hor)(85) | L(Ver)(85) | L45(85) |
|------------|------------|---------|------------|------------|---------|------------|------------|---------|
| 1906       | 1906       | 1906    | 2425       | 2425       | 2425    | 6047       | 6047       | 6047    |

Glare Table

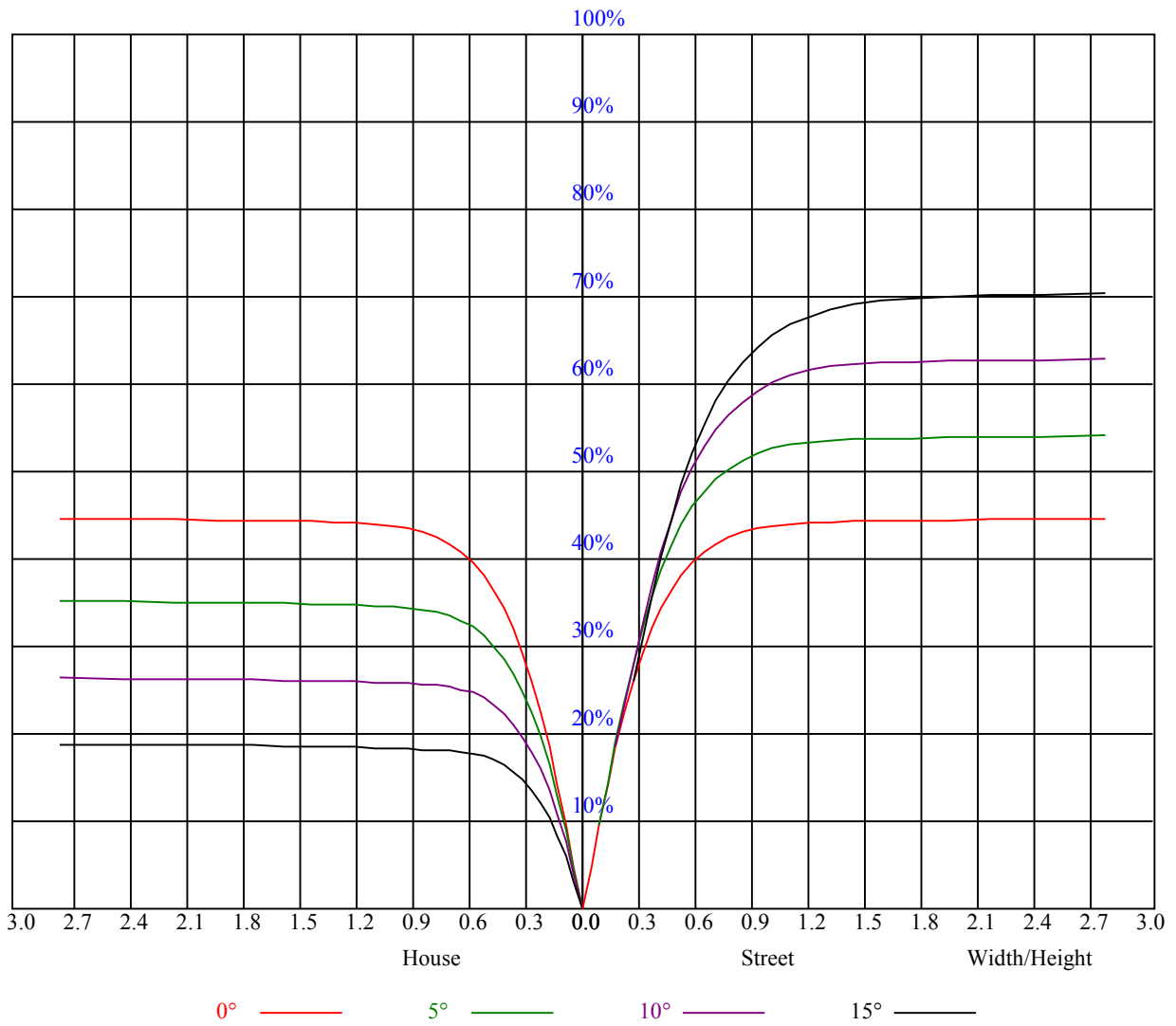
| Glare | Quality | Service Values Illuminance(lx) |      |      |       |       |       |       |       |
|-------|---------|--------------------------------|------|------|-------|-------|-------|-------|-------|
|       |         | a                              | b    | c    | d     | e     | f     | g     | h     |
| 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 | 1.05 | 1.05 | 1.05 | 1.01 | 1.01 | 1.01 | 0.96 | 0.96 | 0.96 | 0.92 | 0.92 | 0.92 | 0.91 |
| 1     | 1.00                                    | 0.98 | 0.96 | 0.98 | 0.96 | 0.94 | 0.94 | 0.93 | 0.91 | 0.91 | 0.90 | 0.89 | 0.88 | 0.87 | 0.86 | 0.84 |
| 2     | 0.93                                    | 0.90 | 0.87 | 0.92 | 0.88 | 0.86 | 0.89 | 0.86 | 0.84 | 0.86 | 0.84 | 0.82 | 0.84 | 0.82 | 0.80 | 0.79 |
| 3     | 0.87                                    | 0.83 | 0.79 | 0.86 | 0.82 | 0.79 | 0.84 | 0.80 | 0.77 | 0.82 | 0.79 | 0.76 | 0.79 | 0.77 | 0.75 | 0.74 |
| 4     | 0.82                                    | 0.77 | 0.73 | 0.81 | 0.76 | 0.73 | 0.79 | 0.75 | 0.72 | 0.77 | 0.74 | 0.71 | 0.76 | 0.73 | 0.70 | 0.69 |
| 5     | 0.77                                    | 0.72 | 0.68 | 0.76 | 0.71 | 0.68 | 0.75 | 0.70 | 0.67 | 0.73 | 0.70 | 0.67 | 0.72 | 0.69 | 0.66 | 0.65 |
| 6     | 0.73                                    | 0.68 | 0.64 | 0.72 | 0.67 | 0.64 | 0.71 | 0.66 | 0.63 | 0.69 | 0.66 | 0.63 | 0.68 | 0.65 | 0.62 | 0.61 |
| 7     | 0.69                                    | 0.64 | 0.60 | 0.68 | 0.63 | 0.60 | 0.67 | 0.63 | 0.59 | 0.66 | 0.62 | 0.59 | 0.65 | 0.61 | 0.59 | 0.58 |
| 8     | 0.65                                    | 0.60 | 0.56 | 0.65 | 0.60 | 0.56 | 0.64 | 0.59 | 0.56 | 0.63 | 0.59 | 0.56 | 0.62 | 0.58 | 0.56 | 0.54 |
| 9     | 0.62                                    | 0.57 | 0.53 | 0.61 | 0.57 | 0.53 | 0.61 | 0.56 | 0.53 | 0.60 | 0.56 | 0.53 | 0.59 | 0.55 | 0.53 | 0.52 |
| 10    | 0.59                                    | 0.54 | 0.51 | 0.59 | 0.54 | 0.51 | 0.58 | 0.53 | 0.50 | 0.57 | 0.53 | 0.50 | 0.57 | 0.53 | 0.50 | 0.49 |



Intensity data(cd)

|                 |         |         |        |        |        |        |        |        |        |
|-----------------|---------|---------|--------|--------|--------|--------|--------|--------|--------|
| C/ $\gamma$ (°) | 0.0     | 5.0     | 10.0   | 15.0   | 20.0   | 25.0   | 30.0   | 35.0   | 40.0   |
| 0.0             | 1044.28 | 1025.49 | 943.26 | 795.66 | 613.63 | 382.22 | 246.88 | 190.63 | 125.78 |
| 45.0            | 1037.59 | 1020.99 | 921.43 | 739.74 | 521.61 | 323.49 | 207.73 | 142.54 | 87.69  |
| 90.0            | 1040.91 | 1002.32 | 877.95 | 666.23 | 443.08 | 283.84 | 220.95 | 158.68 | 89.21  |
| 135.0           | 1042.82 | 1020.43 | 919.46 | 746.66 | 544.78 | 359.83 | 255.49 | 196.76 | 111.60 |
| 180.0           | 1044.28 | 1015.71 | 916.26 | 736.43 | 531.79 | 353.59 | 249.30 | 191.98 | 106.31 |
| 225.0           | 1037.59 | 1009.58 | 909.73 | 731.98 | 518.18 | 337.56 | 248.51 | 188.61 | 114.08 |
| 270.0           | 1040.91 | 1020.43 | 958.05 | 795.88 | 613.35 | 400.95 | 272.19 | 186.30 | 113.85 |
| 315.0           | 1042.82 | 1021.67 | 928.24 | 783.17 | 601.88 | 378.68 | 255.15 | 191.64 | 116.04 |
| 360.0           | 1044.28 | 1025.49 | 943.26 | 795.66 | 613.63 | 382.22 | 246.88 | 190.63 | 125.78 |
| C/ $\gamma$ (°) | 45.0    | 50.0    | 55.0   | 60.0   | 65.0   | 70.0   | 75.0   | 80.0   | 85.0   |
| 0.0             | 53.61   | 17.94   | 11.03  | 7.71   | 6.02   | 5.01   | 4.16   | 3.60   | 3.26   |
| 45.0            | 43.20   | 21.77   | 11.87  | 8.10   | 5.91   | 4.84   | 4.05   | 3.54   | 3.15   |
| 90.0            | 26.55   | 11.36   | 6.81   | 5.51   | 4.78   | 4.11   | 3.60   | 3.32   | 3.09   |
| 135.0           | 30.88   | 8.66    | 5.34   | 4.61   | 4.22   | 3.99   | 3.66   | 3.26   | 3.21   |
| 180.0           | 26.21   | 7.82    | 4.73   | 4.16   | 3.83   | 3.71   | 3.49   | 3.32   | 3.32   |
| 225.0           | 43.31   | 12.26   | 6.47   | 4.89   | 4.28   | 3.88   | 3.54   | 3.43   | 3.21   |
| 270.0           | 44.10   | 19.24   | 9.90   | 6.69   | 5.23   | 4.50   | 4.05   | 3.71   | 3.21   |
| 315.0           | 41.06   | 11.87   | 7.43   | 5.79   | 4.95   | 4.50   | 3.99   | 3.54   | 3.21   |
| 360.0           | 53.61   | 17.94   | 11.03  | 7.71   | 6.02   | 5.01   | 4.16   | 3.60   | 3.26   |
| C/ $\gamma$ (°) | 90.0    |         |        |        |        |        |        |        |        |
| 0.0             | 2.98    |         |        |        |        |        |        |        |        |
| 45.0            | 2.70    |         |        |        |        |        |        |        |        |
| 90.0            | 2.81    |         |        |        |        |        |        |        |        |
| 135.0           | 3.15    |         |        |        |        |        |        |        |        |
| 180.0           | 2.93    |         |        |        |        |        |        |        |        |
| 225.0           | 2.70    |         |        |        |        |        |        |        |        |
| 270.0           | 2.87    |         |        |        |        |        |        |        |        |
| 315.0           | 2.93    |         |        |        |        |        |        |        |        |
| 360.0           | 2.98    |         |        |        |        |        |        |        |        |