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## NATA

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LumCAT: 2-1569-M  
Luminaire: BJB 47.319.2021  
Report No: NATA0100  
Test No: GC2020011326  
LampCAT: LUMINUS CXM-14-AC40  
Lamp flux(lm): 2552.0  
Number of Lamps: 1  
Length(mm): 0  
Phm Type: C

Voltage(V): 34.2800  
Current(A): 0.6020  
Power (W): 20.6000  
PF: 0.0000  
Ballast type: DC  
Width(mm): 0  
Height(mm): 0

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## Photometric Results

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Lumens(lm): 2294.85  
Efficiency(%): 89.92%  
Lumens(lm)/Power(W): 111.40  
Central intensity(cd): 2544.047  
Maximum intensity(cd): 2544.258  
Angle of maximum intensity: C=0.0  $\gamma$ =5.0  
Beam Angle(50%Imax): [C0/180]Total=60.0  
                                  [C90/270]Total=60.0  
Field angle(10%Imax): [C0/180]Total=79.3  
                                  [C90/270]Total=79.3  
Maximum s/h(1/2): C0\_180=0.98 C90\_270=0.98  
Maximum s/h(1/4): C0\_180=0.89 C90\_270=0.89  
Up flux rate of lamp(%): 0.00%  
Down flux rate of lamp(%): 89.92%  
Up flux rate of LUM(%): - -  
Down flux rate of LUM(%): 100.00%  
CIE Type : Direct lighting  
Output flux ratio in  $\pi$  solid angle : 98.505%

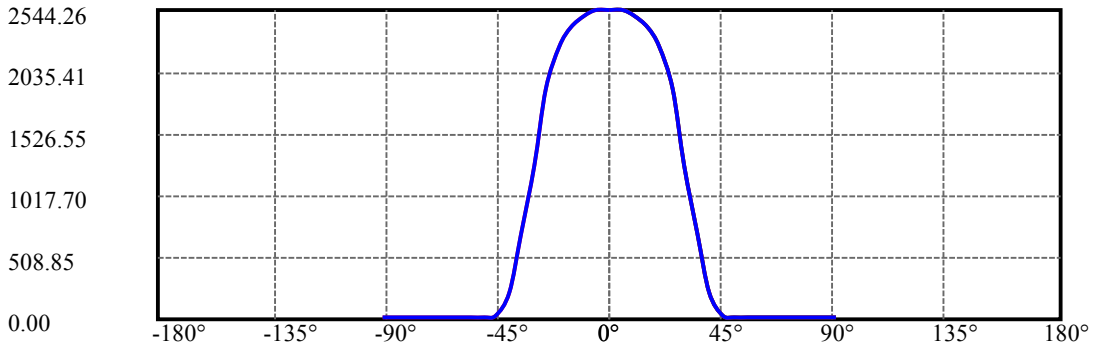
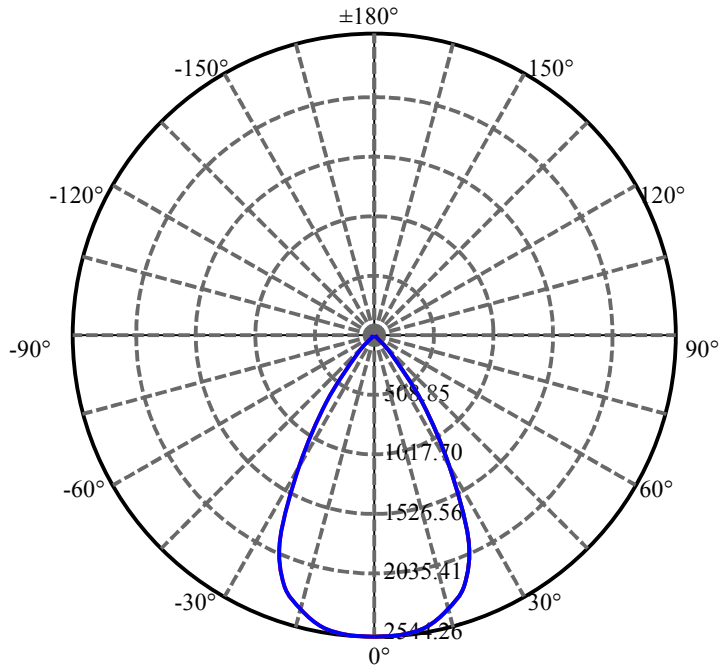
| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 0.0                | 2544.047      | 0.000       | 0         | .000%       | .000%      |
| 5.0                | 2544.258      | 60.829      | 60.829    | 2.384%      | 2.651%     |
| 10.0               | 2494.125      | 180.239     | 241.068   | 7.063%      | 10.505%    |
| 15.0               | 2403.914      | 290.548     | 531.616   | 11.385%     | 23.166%    |
| 20.0               | 2244.234      | 383.073     | 914.689   | 15.011%     | 39.858%    |
| 25.0               | 1892.672      | 433.885     | 1348.574  | 17.002%     | 58.765%    |
| 30.0               | 1270.519      | 400.304     | 1748.879  | 15.686%     | 76.209%    |
| 35.0               | 698.203       | 289.908     | 2038.787  | 11.360%     | 88.842%    |
| 40.0               | 220.423       | 153.266     | 2192.053  | 6.006%      | 95.521%    |
| 45.0               | 29.243        | 46.228      | 2238.28   | 1.811%      | 97.535%    |
| 50.0               | 17.213        | 9.387       | 2247.667  | .368%       | 97.944%    |
| 55.0               | 13.816        | 6.747       | 2254.414  | .264%       | 98.238%    |
| 60.0               | 12.670        | 6.122       | 2260.536  | .240%       | 98.505%    |
| 65.0               | 11.820        | 5.954       | 2266.49   | .233%       | 98.764%    |
| 70.0               | 11.180        | 5.824       | 2272.313  | .228%       | 99.018%    |
| 75.0               | 10.680        | 5.714       | 2278.027  | .224%       | 99.267%    |
| 80.0               | 10.364        | 5.631       | 2283.658  | .221%       | 99.512%    |
| 85.0               | 10.238        | 5.598       | 2289.256  | .219%       | 99.756%    |
| 90.0               | 10.188        | 5.593       | 2294.849  | .219%       | 100.000%   |

ZONAL LUMEN SUMMARY

| Zone    | Lumens  | %Lamp  | %Fixt   |
|---------|---------|--------|---------|
| 0-30    | 1748.88 | 68.53% | 76.21%  |
| 0-40    | 2192.05 | 85.90% | 95.52%  |
| 0-60    | 2260.54 | 88.58% | 98.50%  |
| 0-90    | 2289.26 | 89.70% | 99.76%  |
| 0-120   | 2289.26 | 89.70% | 99.76%  |
| 0-180   | 2294.85 | 89.92% | 100.00% |
| 60-90   | 34.84   | 1.37%  | 1.52%   |
| 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%   |
| 0-31.50 | 1835.88 | 71.94% | 80.00%  |

ZONAL LUMEN SUMMARY

|         |        |
|---------|--------|
| 0-10    | 241.07 |
| 10-20   | 673.62 |
| 20-30   | 834.19 |
| 30-40   | 443.17 |
| 40-50   | 55.61  |
| 50-60   | 12.87  |
| 60-70   | 11.78  |
| 70-80   | 11.34  |
| 80-90   | 5.60   |
| 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: —————

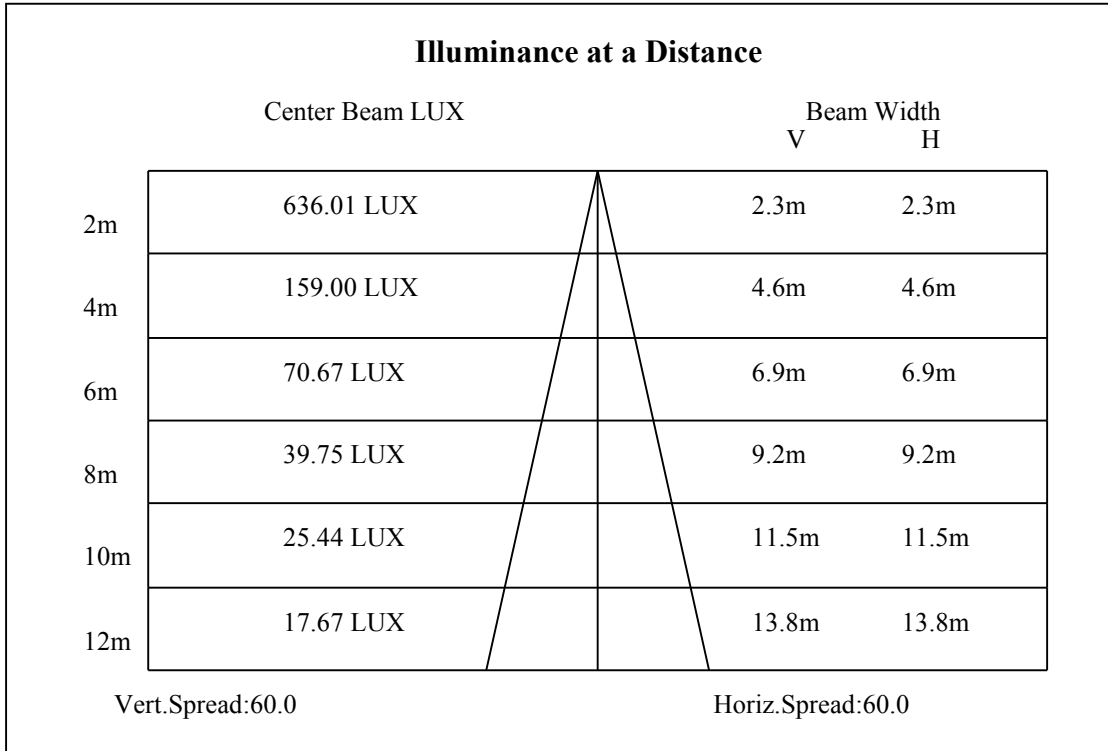
C90/C270: —————

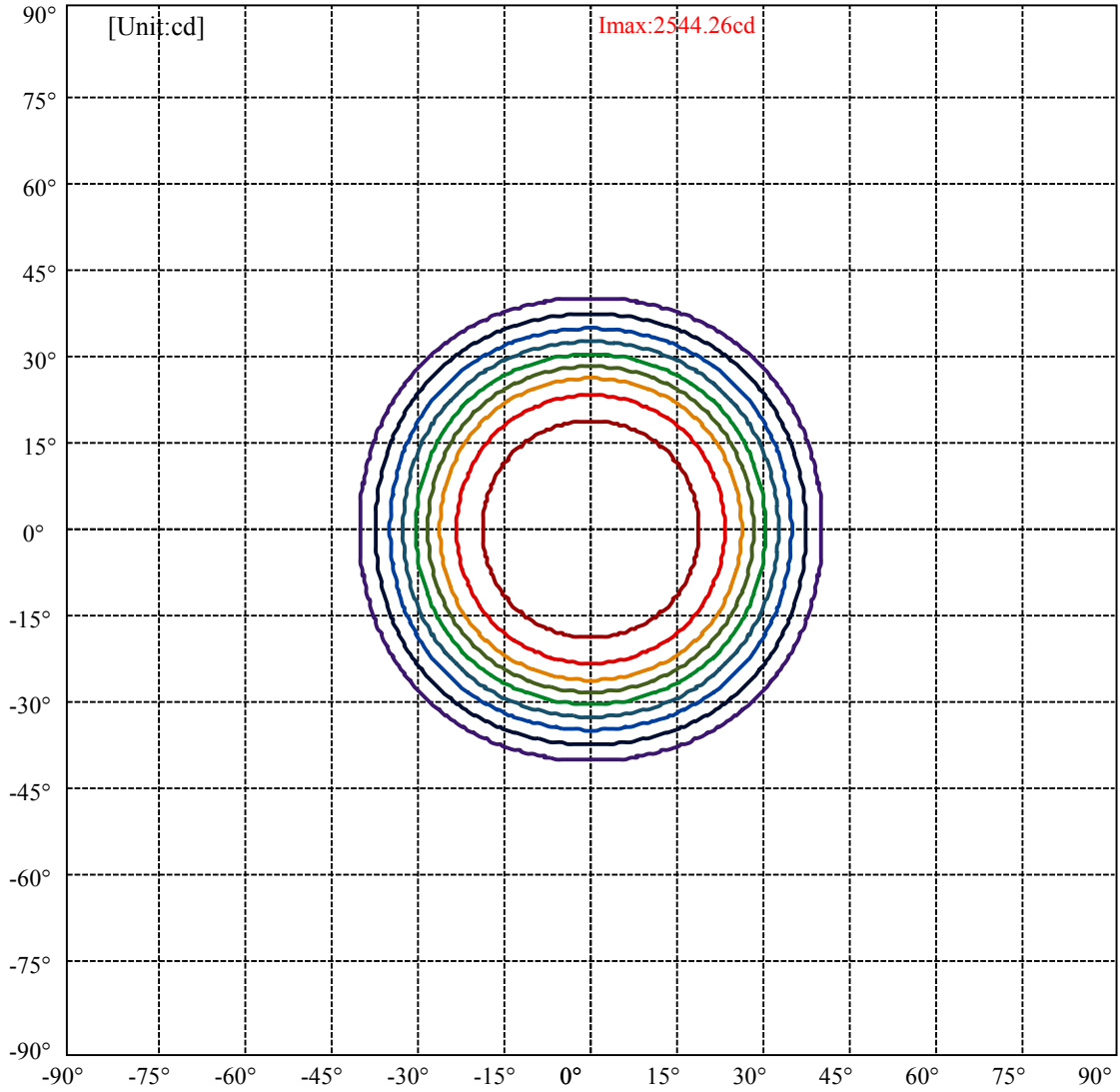
Field angle(10%Imax):C0/180Left:44.6 Right:34.6

:C90/270Left:44.6 Right:34.6

Beam Angle(50%Imax):C0/180Left:35.0 Right:25.0

:C90/270Left:35.0 Right:25.0



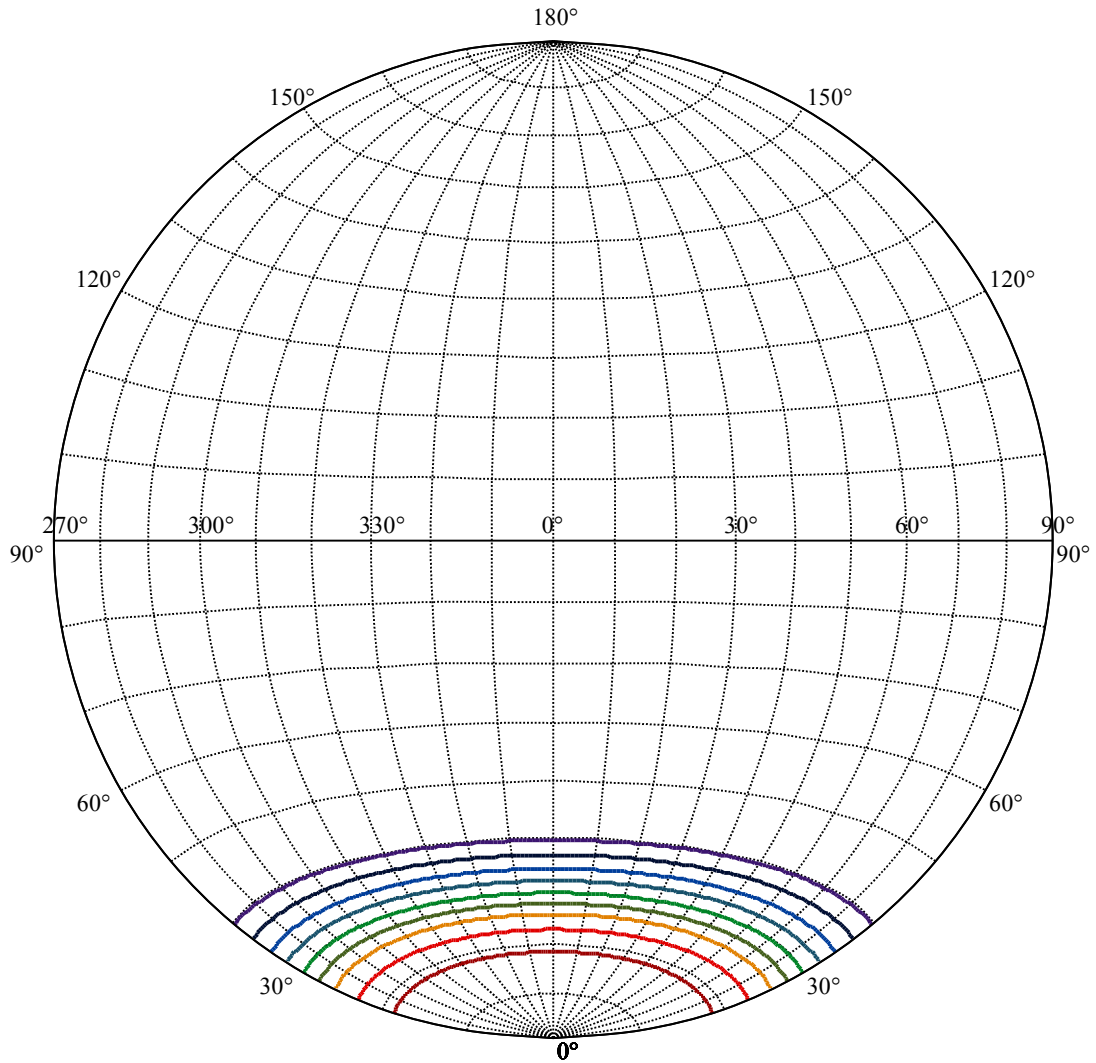


|                   |   |
|-------------------|---|
| (10%Imax) 254.426 | — |
| (20%Imax) 508.852 | — |
| (30%Imax) 763.277 | — |
| (40%Imax) 1017.7  | — |
| (50%Imax) 1272.13 | — |
| (60%Imax) 1526.55 | — |
| (70%Imax) 1780.98 | — |
| (80%Imax) 2035.41 | — |
| (90%Imax) 2289.83 | — |

Equipment: GMS1980  
Temperature(°C): 25.0

Date: 2020/1/13  
Humidity(%): 65.0%

Operator: NT07  
Distance(m): 7.50



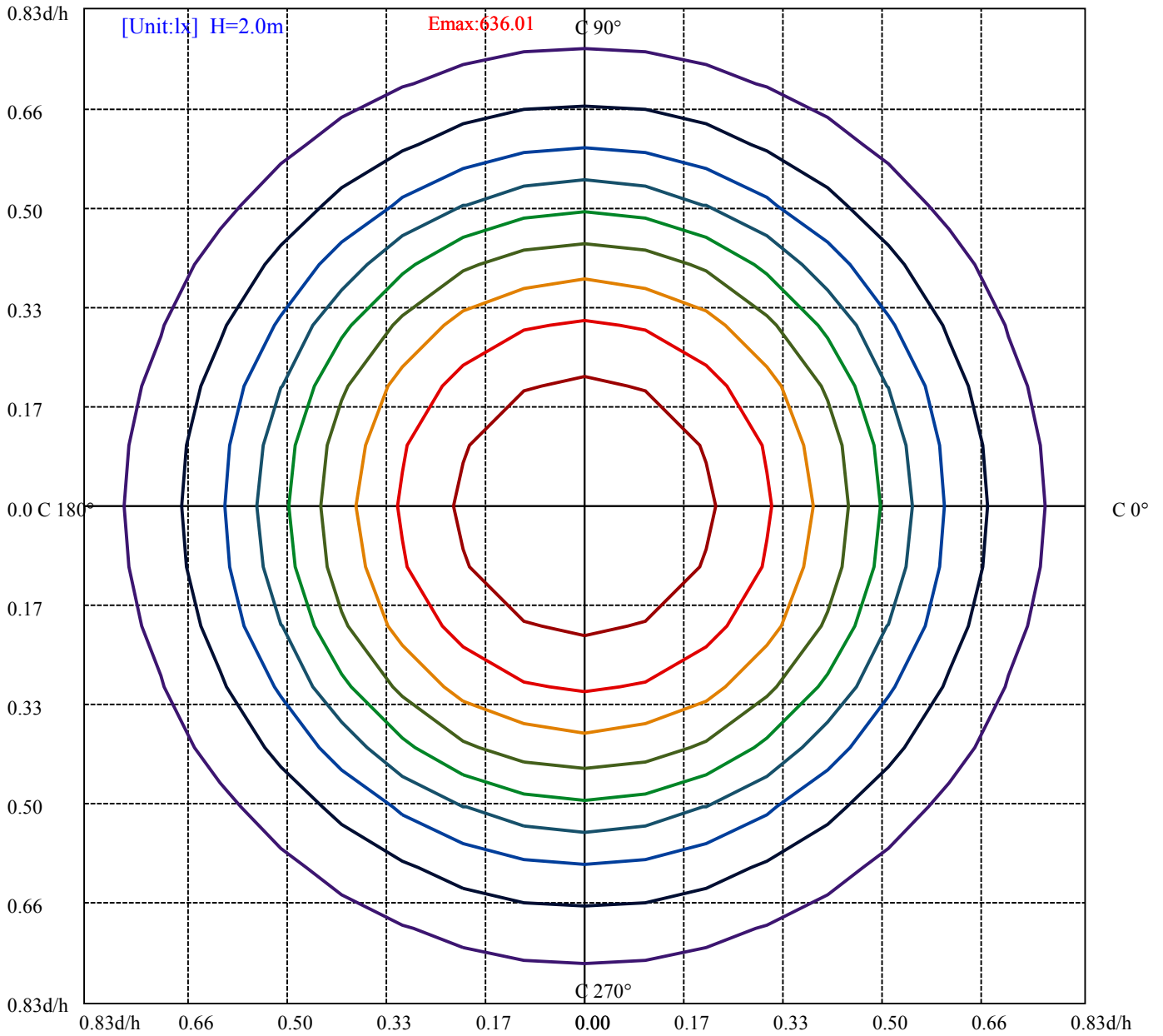
House

[Unit:cd]

Road

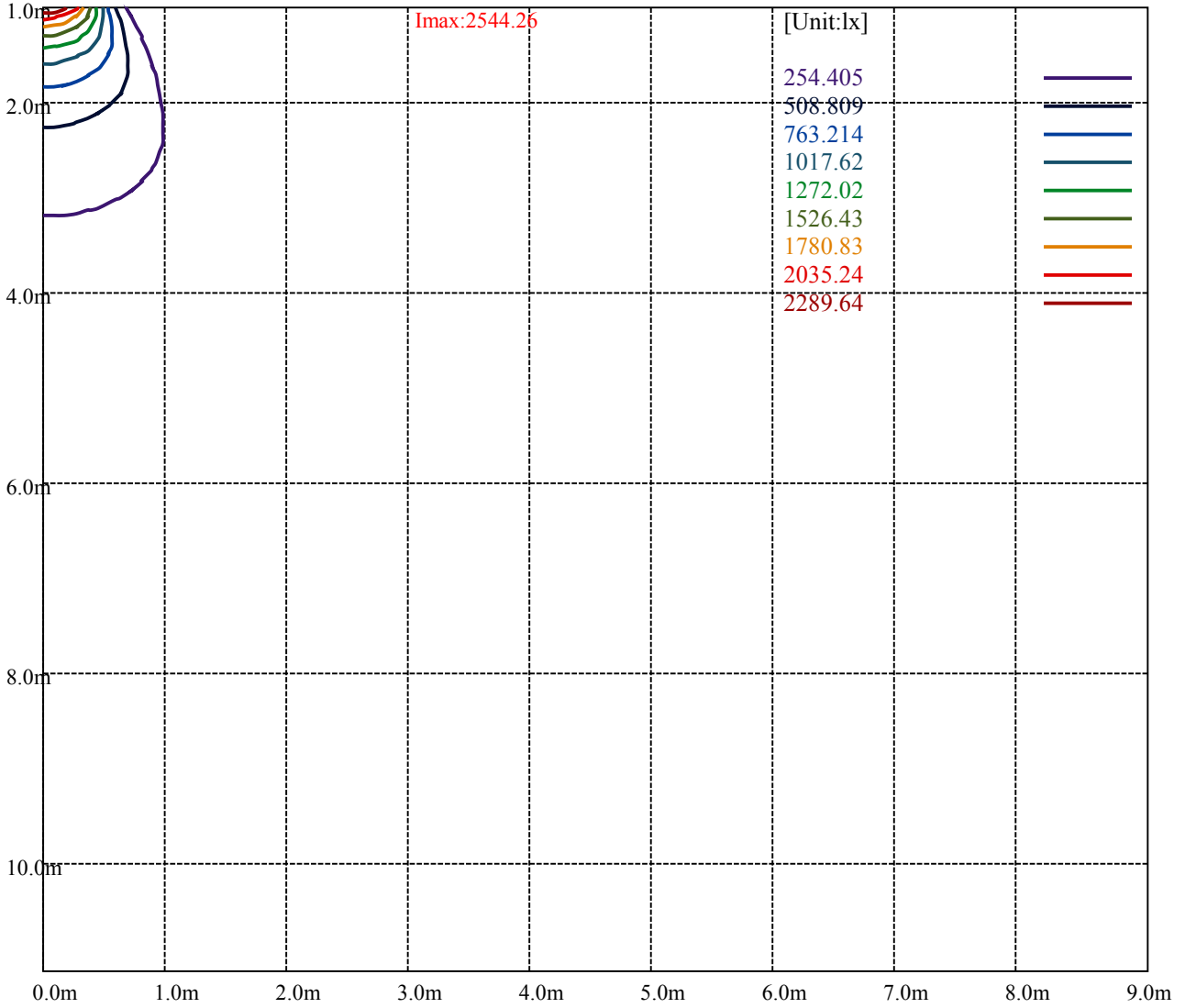
**I<sub>max</sub>:2544.26**

|                                |   |
|--------------------------------|---|
| (10%I <sub>max</sub> ) 254.426 | — |
| (20%I <sub>max</sub> ) 508.852 | — |
| (30%I <sub>max</sub> ) 763.277 | — |
| (40%I <sub>max</sub> ) 1017.7  | — |
| (50%I <sub>max</sub> ) 1272.13 | — |
| (60%I <sub>max</sub> ) 1526.55 | — |
| (70%I <sub>max</sub> ) 1780.98 | — |
| (80%I <sub>max</sub> ) 2035.41 | — |
| (90%I <sub>max</sub> ) 2289.83 | — |



|                    |   |
|--------------------|---|
| (10%Emax) 63.60125 | — |
| (20%Emax) 127.2022 | — |
| (30%Emax) 190.8035 | — |
| (40%Emax) 254.405  | — |
| (50%Emax) 318.005  | — |
| (60%Emax) 381.6075 | — |
| (70%Emax) 445.2075 | — |
| (80%Emax) 508.81   | — |
| (90%Emax) 572.41   | — |





Luminance Table

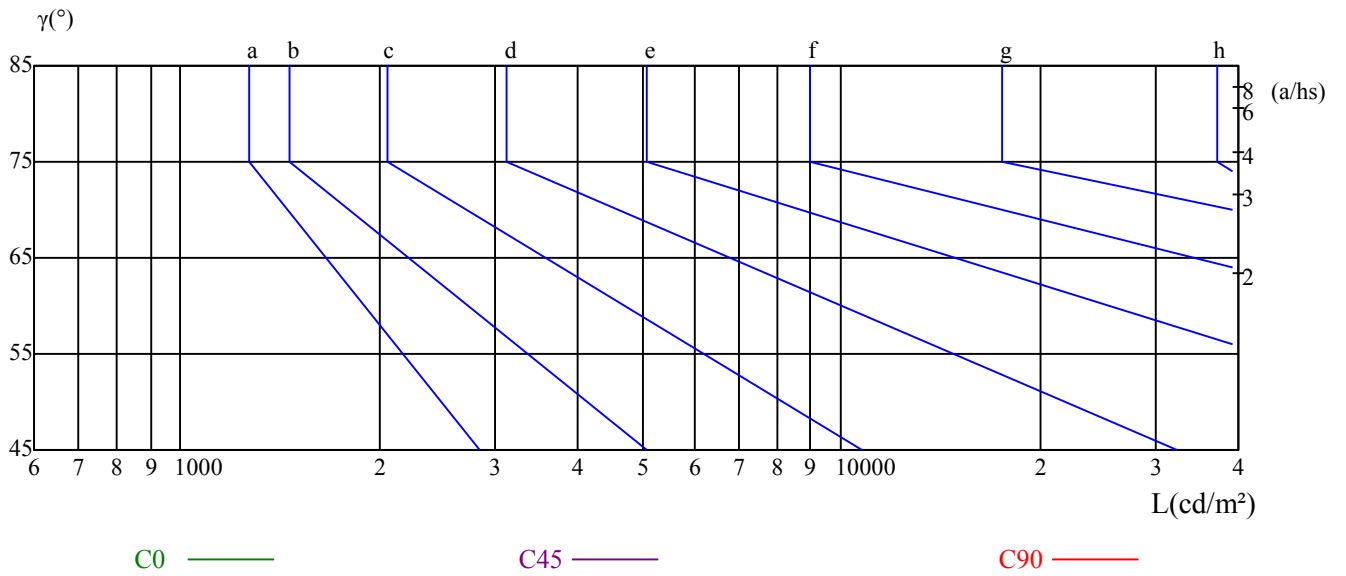
| $\gamma$ | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 |
|----------|----|----|----|----|----|----|----|----|----|
| C0       | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| C45      | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| C90      | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |

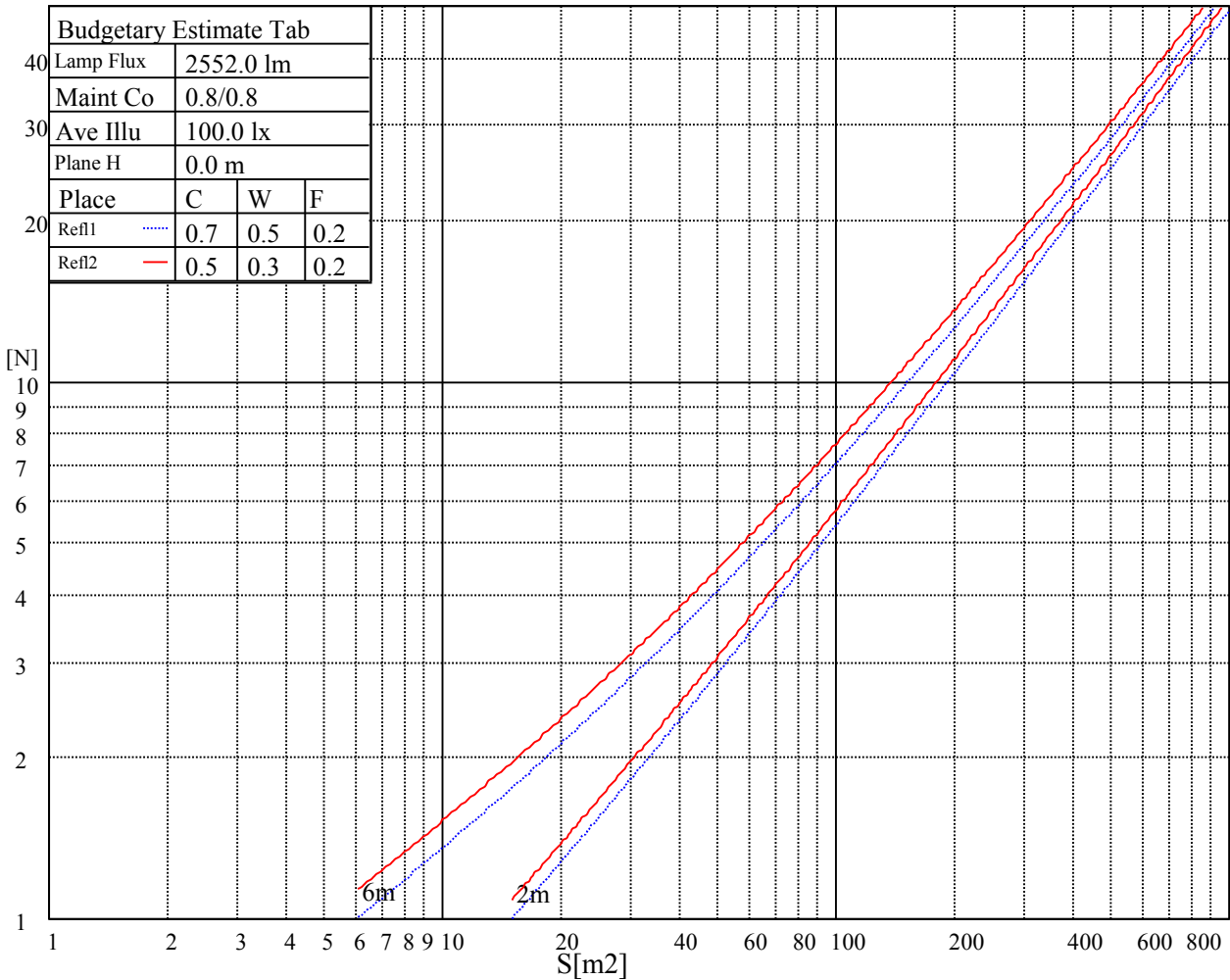
| L(Hor)(65) | L(Ver)(65) | L45(65) | L(Hor)(75) | L(Ver)(75) | L45(75) | L(Hor)(85) | L(Ver)(85) | L45(85) |
|------------|------------|---------|------------|------------|---------|------------|------------|---------|
| 0          | 0          | 0       | 0          | 0          | 0       | 0          | 0          | 0       |

Glare Table

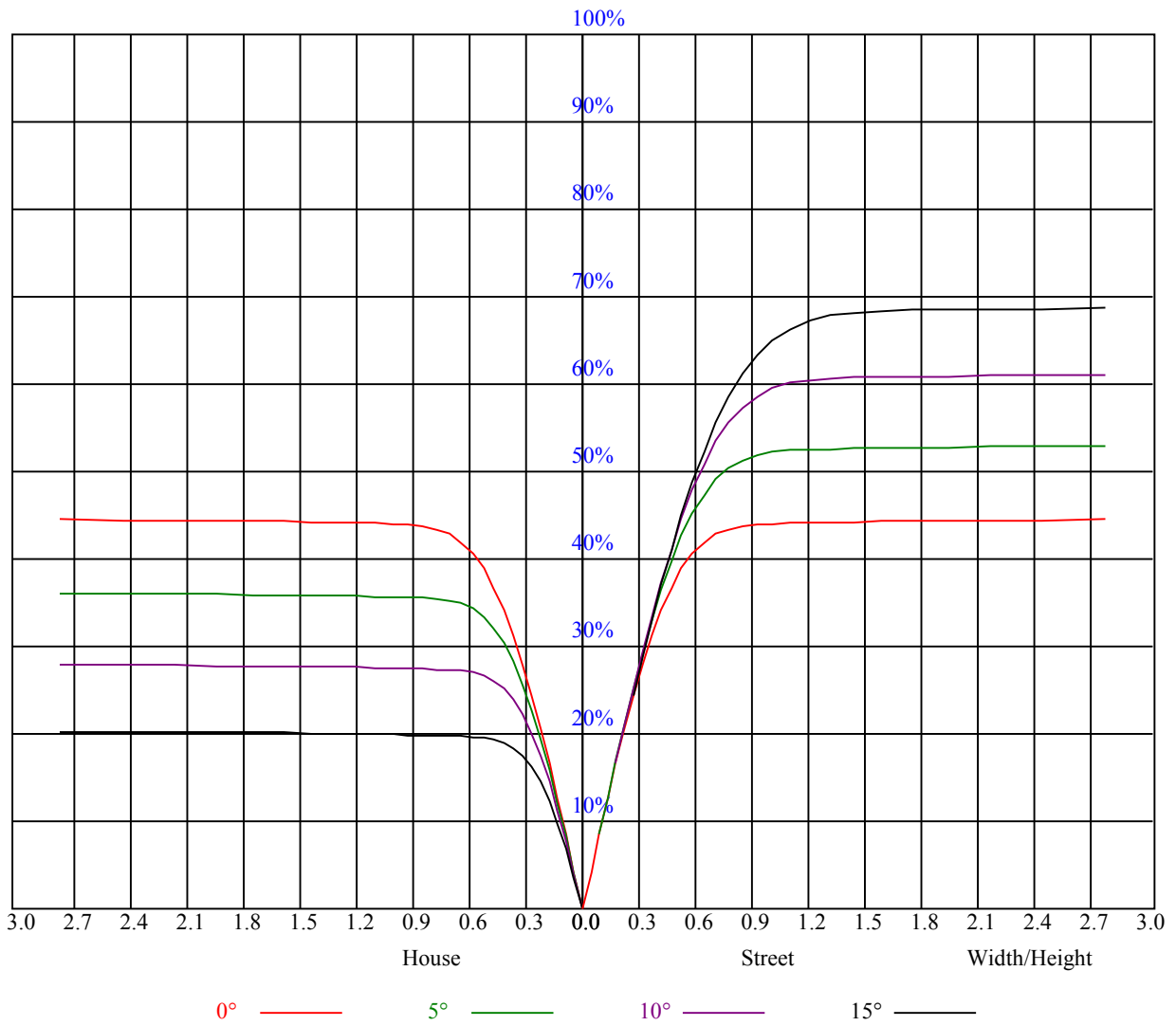
| Glare | Quality | Service Values Illuminance(lx) |      |      |       |       |       |       |       |
|-------|---------|--------------------------------|------|------|-------|-------|-------|-------|-------|
| 1.15  | A       | 2000                           | 1000 | 500  | <=300 |       |       |       |       |
| 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     | 1.07                                    | 1.07 | 1.07 | 1.05 | 1.05 | 1.05 | 1.00 | 1.00 | 1.00 | 0.96 | 0.96 | 0.96 | 0.92 | 0.92 | 0.92 | 0.90 |
| 1     | 0.99                                    | 0.97 | 0.95 | 0.98 | 0.95 | 0.94 | 0.94 | 0.92 | 0.91 | 0.91 | 0.89 | 0.88 | 0.87 | 0.86 | 0.86 | 0.84 |
| 2     | 0.93                                    | 0.89 | 0.86 | 0.91 | 0.88 | 0.85 | 0.88 | 0.86 | 0.83 | 0.86 | 0.83 | 0.81 | 0.83 | 0.81 | 0.80 | 0.78 |
| 3     | 0.87                                    | 0.82 | 0.79 | 0.85 | 0.81 | 0.78 | 0.83 | 0.80 | 0.77 | 0.81 | 0.78 | 0.76 | 0.79 | 0.77 | 0.75 | 0.73 |
| 4     | 0.81                                    | 0.76 | 0.73 | 0.80 | 0.76 | 0.72 | 0.78 | 0.74 | 0.71 | 0.76 | 0.73 | 0.71 | 0.75 | 0.72 | 0.70 | 0.68 |
| 5     | 0.76                                    | 0.71 | 0.67 | 0.75 | 0.71 | 0.67 | 0.74 | 0.70 | 0.66 | 0.72 | 0.69 | 0.66 | 0.71 | 0.68 | 0.65 | 0.64 |
| 6     | 0.72                                    | 0.67 | 0.63 | 0.71 | 0.66 | 0.63 | 0.70 | 0.65 | 0.62 | 0.68 | 0.65 | 0.62 | 0.67 | 0.64 | 0.61 | 0.60 |
| 7     | 0.68                                    | 0.62 | 0.59 | 0.67 | 0.62 | 0.59 | 0.66 | 0.61 | 0.58 | 0.65 | 0.61 | 0.58 | 0.64 | 0.60 | 0.58 | 0.56 |
| 8     | 0.64                                    | 0.59 | 0.55 | 0.63 | 0.58 | 0.55 | 0.62 | 0.58 | 0.55 | 0.61 | 0.57 | 0.54 | 0.61 | 0.57 | 0.54 | 0.53 |
| 9     | 0.60                                    | 0.55 | 0.52 | 0.60 | 0.55 | 0.52 | 0.59 | 0.55 | 0.51 | 0.58 | 0.54 | 0.51 | 0.58 | 0.54 | 0.51 | 0.50 |
| 10    | 0.57                                    | 0.52 | 0.49 | 0.57 | 0.52 | 0.49 | 0.56 | 0.52 | 0.49 | 0.55 | 0.51 | 0.48 | 0.55 | 0.51 | 0.48 | 0.47 |



NATA 2-1569-M

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    | 2539.69 | 2558.25 | 2520.56 | 2446.31 | 2298.38 | 1960.31 | 1427.06 | 786.38 | 290.81 |
| 45.0   | 2552.06 | 2554.88 | 2518.88 | 2441.25 | 2290.50 | 1969.31 | 1493.44 | 814.50 | 285.19 |
| 90.0   | 2541.94 | 2542.50 | 2491.31 | 2396.81 | 2224.13 | 1860.75 | 1121.29 | 682.54 | 177.64 |
| 135.0  | 2542.50 | 2531.25 | 2487.38 | 2403.00 | 2269.13 | 1936.13 | 1442.81 | 782.44 | 294.19 |
| 180.0  | 2539.69 | 2525.63 | 2467.13 | 2367.56 | 2199.94 | 1819.13 | 1105.20 | 633.77 | 150.13 |
| 225.0  | 2552.06 | 2532.94 | 2477.81 | 2376.00 | 2206.13 | 1827.56 | 1100.25 | 576.79 | 129.15 |
| 270.0  | 2541.94 | 2550.94 | 2504.25 | 2415.94 | 2247.75 | 1935.00 | 1385.44 | 702.00 | 303.75 |
| 315.0  | 2542.50 | 2557.69 | 2485.69 | 2384.44 | 2217.94 | 1833.19 | 1088.66 | 607.22 | 132.53 |
| 360.0  | 2539.69 | 2558.25 | 2520.56 | 2446.31 | 2298.38 | 1960.31 | 1427.06 | 786.38 | 290.81 |

| C/γ(°) | 45.0  | 50.0  | 55.0  | 60.0  | 65.0  | 70.0  | 75.0  | 80.0  | 85.0  |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0.0    | 30.77 | 17.83 | 13.73 | 12.54 | 11.81 | 11.19 | 10.69 | 10.41 | 10.35 |
| 45.0   | 32.46 | 17.49 | 13.61 | 12.60 | 11.76 | 11.19 | 10.69 | 10.41 | 10.18 |
| 90.0   | 29.08 | 16.82 | 13.73 | 12.60 | 11.76 | 11.08 | 10.63 | 10.35 | 10.24 |
| 135.0  | 32.85 | 18.39 | 14.23 | 12.94 | 11.98 | 11.31 | 10.74 | 10.41 | 10.24 |
| 180.0  | 26.89 | 16.82 | 13.78 | 12.66 | 11.81 | 11.19 | 10.63 | 10.35 | 10.29 |
| 225.0  | 25.59 | 16.20 | 13.78 | 12.60 | 11.76 | 11.08 | 10.69 | 10.29 | 10.18 |
| 270.0  | 30.04 | 17.16 | 14.01 | 12.88 | 11.93 | 11.25 | 10.74 | 10.35 | 10.18 |
| 315.0  | 26.27 | 16.99 | 13.67 | 12.54 | 11.76 | 11.14 | 10.63 | 10.35 | 10.24 |
| 360.0  | 30.77 | 17.83 | 13.73 | 12.54 | 11.81 | 11.19 | 10.69 | 10.41 | 10.35 |

| C/γ(°) | 90.0  |
|--------|-------|
| 0.0    | 10.24 |
| 45.0   | 10.18 |
| 90.0   | 10.18 |
| 135.0  | 10.18 |
| 180.0  | 10.18 |
| 225.0  | 10.18 |
| 270.0  | 10.18 |
| 315.0  | 10.18 |
| 360.0  | 10.24 |