NATA LIGHTING CO.,LTD.
www.nata.cn
Email:info@nata.com
Tel:+86-750-3770000 Fax:+86 750 3771111
Address:Address:380JinOu Road,GaoXin Zone,Jiang Men City,Guangdong,China

NT

Client: NT
LumCAT: 61-0216-3
Luminaire: 92.70.427.00
Report No: 20250226-B003
Ballast type: AC

| | |
|---|---|
| Test No: 20250226-C003 | Voltage(V): 35.920 |
| LampCAT: CITIZEN CLU028 | Current(A): 0.360 |
| Lamp flux(lm): 1484.0 | Power (W): 12.930 |
| Number of Lamps: 1 | PF: 0.000 |
| Length(mm): 50 | Width(mm): 50 |
| Phm Type: C | Height(mm): 24 |

## Photometric Results

Lumens(lm): 1398.33, Efficiency(%): 94.23% , Luminous Efficacy(lm/W): 108.15
Central intensity(cd): 6690.453, Maximum intensity(cd): 6690.453
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=23.8
[C90/270]Total=23.8
Field angle(10%Imax): [C0/180]Total=42.8
[C90/270]Total=42.8
Maximum s/h(1/2): C0_180=0.40 C90_270=0.40
Maximum s/h(1/4): C0_180=0.40 C90_270=0.40
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 94.23%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.912%

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 0.0 | 6690.453 | 0.000 | 0 | 0.00% | 0.00% |
| 1.0 | 6666.672 | 6.391 | 6.391 | 0.43% | 0.46% |
| 2.0 | 6564.888 | 18.991 | 25.382 | 1.28% | 1.82% |
| 3.0 | 6422.005 | 31.060 | 56.443 | 2.09% | 4.04% |
| 4.0 | 6224.698 | 42.333 | 98.775 | 2.85% | 7.06% |
| 5.0 | 5961.379 | 52.424 | 151.199 | 3.53% | 10.81% |
| 6.0 | 5654.029 | 61.042 | 212.241 | 4.11% | 15.18% |
| 7.0 | 5307.711 | 68.039 | 280.281 | 4.58% | 20.04% |
| 8.0 | 4931.017 | 73.277 | 353.557 | 4.94% | 25.28% |
| 9.0 | 4531.941 | 76.692 | 430.249 | 5.17% | 30.77% |
| 10.0 | 4119.011 | 78.288 | 508.537 | 5.28% | 36.37% |
| 11.0 | 3702.483 | 78.153 | 586.69 | 5.27% | 41.96% |
| 12.0 | 3290.085 | 76.439 | 663.129 | 5.15% | 47.42% |
| 13.0 | 2889.744 | 73.339 | 736.468 | 4.94% | 52.67% |
| 14.0 | 2490.601 | 68.868 | 805.336 | 4.64% | 57.59% |
| 15.0 | 2153.968 | 63.763 | 869.098 | 4.30% | 62.15% |
| 16.0 | 1797.172 | 57.895 | 926.994 | 3.90% | 66.29% |
| 17.0 | 1520.750 | 51.669 | 978.663 | 3.48% | 69.99% |
| 18.0 | 1296.772 | 46.455 | 1025.117 | 3.13% | 73.31% |
| 19.0 | 1017.433 | 40.262 | 1065.38 | 2.71% | 76.19% |
| 20.0 | 868.627 | 34.520 | 1099.9 | 2.33% | 78.66% |
| 21.0 | 714.885 | 30.407 | 1130.307 | 2.05% | 80.83% |
| 22.0 | 598.800 | 26.399 | 1156.706 | 1.78% | 82.72% |
| 23.0 | 477.112 | 22.576 | 1179.281 | 1.52% | 84.34% |
| 24.0 | 391.582 | 18.993 | 1198.274 | 1.28% | 85.69% |
| 25.0 | 332.137 | 16.456 | 1214.73 | 1.11% | 86.87% |
| 26.0 | 267.203 | 14.147 | 1228.877 | 0.95% | 87.88% |
| 27.0 | 215.685 | 11.814 | 1240.691 | 0.80% | 88.73% |
| 28.0 | 184.890 | 10.142 | 1250.833 | 0.68% | 89.45% |
| 29.0 | 150.411 | 8.772 | 1259.605 | 0.59% | 90.08% |
| 30.0 | 133.092 | 7.655 | 1267.26 | 0.52% | 90.63% |
| 31.0 | 107.246 | 6.688 | 1273.948 | 0.45% | 91.11% |
| 32.0 | 93.038 | 5.738 | 1279.686 | 0.39% | 91.52% |
| 33.0 | 81.780 | 5.150 | 1284.836 | 0.35% | 91.88% |
| 34.0 | 72.967 | 4.683 | 1289.519 | 0.32% | 92.22% |
| 35.0 | 65.866 | 4.312 | 1293.831 | 0.29% | 92.53% |
| 36.0 | 60.711 | 4.030 | 1297.861 | 0.27% | 92.82% |
| 37.0 | 55.468 | 3.789 | 1301.65 | 0.26% | 93.09% |

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 38.0 | 51.498 | 3.570 | 1305.221 | 0.24% | 93.34% |
| 39.0 | 48.900 | 3.427 | 1308.648 | 0.23% | 93.59% |
| 40.0 | 46.176 | 3.316 | 1311.963 | 0.22% | 93.82% |
| 41.0 | 44.137 | 3.216 | 1315.18 | 0.22% | 94.05% |
| 42.0 | 42.619 | 3.152 | 1318.332 | 0.21% | 94.28% |
| 43.0 | 41.280 | 3.108 | 1321.439 | 0.21% | 94.50% |
| 44.0 | 40.101 | 3.072 | 1324.511 | 0.21% | 94.72% |
| 45.0 | 39.102 | 3.044 | 1327.555 | 0.21% | 94.94% |
| 46.0 | 38.162 | 3.022 | 1330.576 | 0.20% | 95.15% |
| 47.0 | 37.343 | 3.003 | 1333.579 | 0.20% | 95.37% |
| 48.0 | 36.530 | 2.986 | 1336.566 | 0.20% | 95.58% |
| 49.0 | 35.751 | 2.968 | 1339.534 | 0.20% | 95.80% |
| 50.0 | 34.932 | 2.947 | 1342.481 | 0.20% | 96.01% |
| 51.0 | 34.086 | 2.920 | 1345.401 | 0.20% | 96.22% |
| 52.0 | 33.206 | 2.888 | 1348.289 | 0.19% | 96.42% |
| 53.0 | 32.294 | 2.849 | 1351.138 | 0.19% | 96.63% |
| 54.0 | 31.275 | 2.802 | 1353.94 | 0.19% | 96.83% |
| 55.0 | 30.122 | 2.741 | 1356.68 | 0.18% | 97.02% |
| 56.0 | 28.890 | 2.667 | 1359.347 | 0.18% | 97.21% |
| 57.0 | 27.704 | 2.588 | 1361.934 | 0.17% | 97.40% |
| 58.0 | 26.445 | 2.504 | 1364.439 | 0.17% | 97.58% |
| 59.0 | 24.913 | 2.401 | 1366.84 | 0.16% | 97.75% |
| 60.0 | 23.714 | 2.297 | 1369.137 | 0.15% | 97.91% |
| 61.0 | 22.348 | 2.198 | 1371.335 | 0.15% | 98.07% |
| 62.0 | 20.956 | 2.087 | 1373.422 | 0.14% | 98.22% |
| 63.0 | 19.744 | 1.979 | 1375.401 | 0.13% | 98.36% |
| 64.0 | 18.545 | 1.879 | 1377.28 | 0.13% | 98.49% |
| 65.0 | 17.353 | 1.777 | 1379.057 | 0.12% | 98.62% |
| 66.0 | 16.220 | 1.675 | 1380.732 | 0.11% | 98.74% |
| 67.0 | 15.154 | 1.578 | 1382.309 | 0.11% | 98.85% |
| 68.0 | 14.122 | 1.483 | 1383.792 | 0.10% | 98.96% |
| 69.0 | 13.169 | 1.392 | 1385.185 | 0.09% | 99.06% |
| 70.0 | 12.263 | 1.306 | 1386.491 | 0.09% | 99.15% |
| 71.0 | 11.384 | 1.222 | 1387.713 | 0.08% | 99.24% |
| 72.0 | 10.585 | 1.142 | 1388.855 | 0.08% | 99.32% |
| 73.0 | 9.765 | 1.064 | 1389.919 | 0.07% | 99.40% |
| 74.0 | 8.979 | 0.985 | 1390.905 | 0.07% | 99.47% |
| 75.0 | 8.213 | 0.908 | 1391.813 | 0.06% | 99.53% |

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 76.0 | 7.454 | 0.832 | 1392.645 | 0.06% | 99.59% |
| 77.0 | 6.801 | 0.760 | 1393.405 | 0.05% | 99.65% |
| 78.0 | 6.102 | 0.691 | 1394.096 | 0.05% | 99.70% |
| 79.0 | 5.509 | 0.624 | 1394.719 | 0.04% | 99.74% |
| 80.0 | 4.943 | 0.563 | 1395.283 | 0.04% | 99.78% |
| 81.0 | 4.490 | 0.510 | 1395.793 | 0.03% | 99.82% |
| 82.0 | 4.003 | 0.461 | 1396.254 | 0.03% | 99.85% |
| 83.0 | 3.557 | 0.411 | 1396.665 | 0.03% | 99.88% |
| 84.0 | 3.137 | 0.365 | 1397.029 | 0.02% | 99.91% |
| 85.0 | 2.678 | 0.317 | 1397.347 | 0.02% | 99.93% |
| 86.0 | 2.311 | 0.273 | 1397.619 | 0.02% | 99.95% |
| 87.0 | 1.932 | 0.232 | 1397.852 | 0.02% | 99.97% |
| 88.0 | 1.572 | 0.192 | 1398.044 | 0.01% | 99.98% |
| 89.0 | 1.266 | 0.156 | 1398.199 | 0.01% | 99.99% |
| 90.0 | 1.066 | 0.128 | 1398.327 | 0.01% | 100.00% |

## Zonal flux distribution table



ZONAL LUMEN SUMMARY

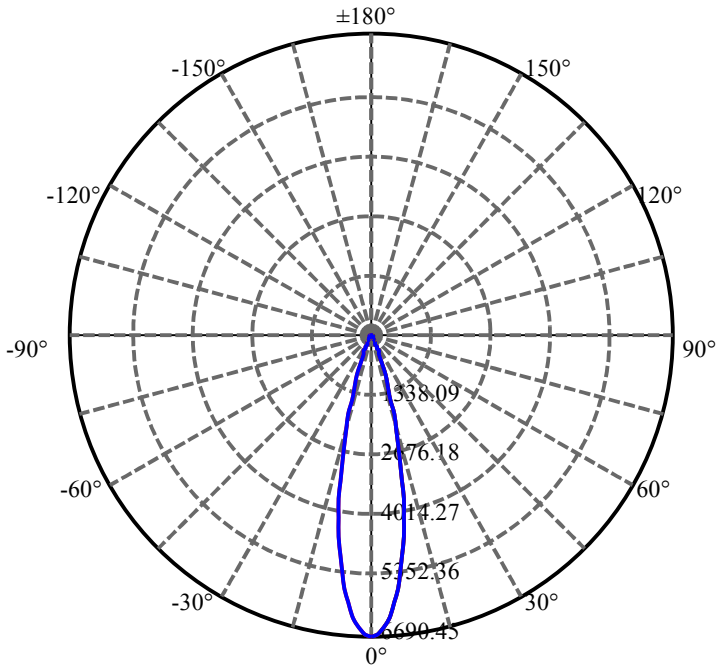
| Zone | Lumens | %Lamp | %Fixt |
|---|---|---|---|
| 0-30 | 1267.26 | 85.40% | 90.63% |
| 0-40 | 1311.96 | 88.41% | 93.82% |
| 0-60 | 1369.14 | 92.26% | 97.91% |
| 0-90 | 1398.20 | 94.22% | 99.99% |
| 0-120 | 1398.20 | 94.22% | 99.99% |
| 0-180 | 1398.33 | 94.23% | 100.00% |
| 60-90 | 29.06 | 1.96% | 2.08% |
| 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% |
| 0-20.62 | 1118.66 | 75.38% | 80.00% |

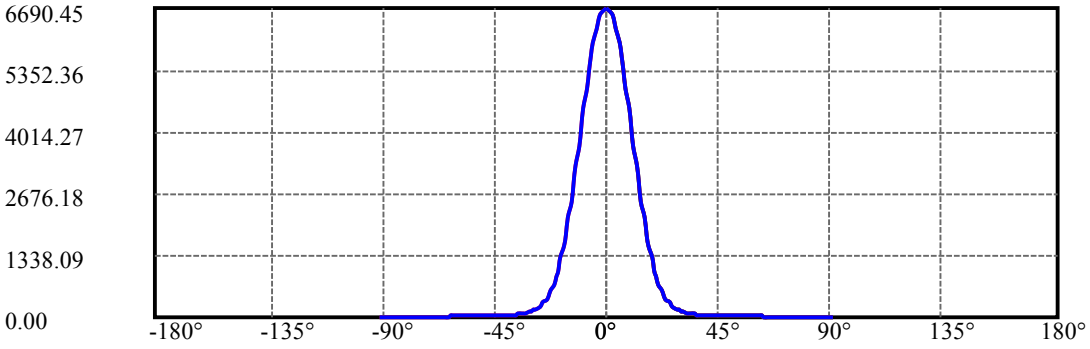
ZONAL LUMEN SUMMARY

| | |
|---|---|
| 0-10 | 508.54 |
| 10-20 | 591.36 |
| 20-30 | 167.36 |
| 30-40 | 44.70 |
| 40-50 | 30.52 |
| 50-60 | 26.66 |
| 60-70 | 17.35 |
| 70-80 | 8.79 |
| 80-90 | 2.92 |
| 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 |

Light Distribution Curve [Unit:cd]






C0(Max):

C0/C180:

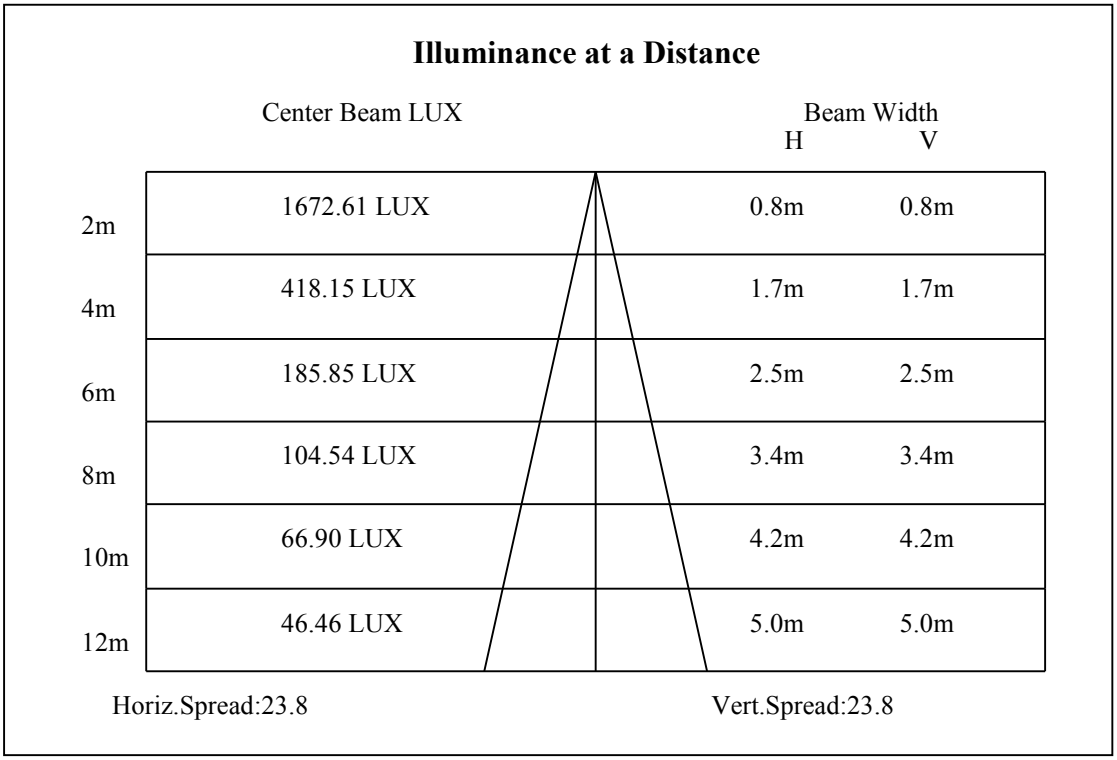
C90/C270:

Field angle(10%Imax):C0/180Left:21.4 Right:21.4
:C90/270Left:21.4 Right:21.4

Beam Angle(50%Imax):C0/180Left:11.9 Right:11.9
:C90/270Left:11.9 Right:11.9

Lux distance Curve

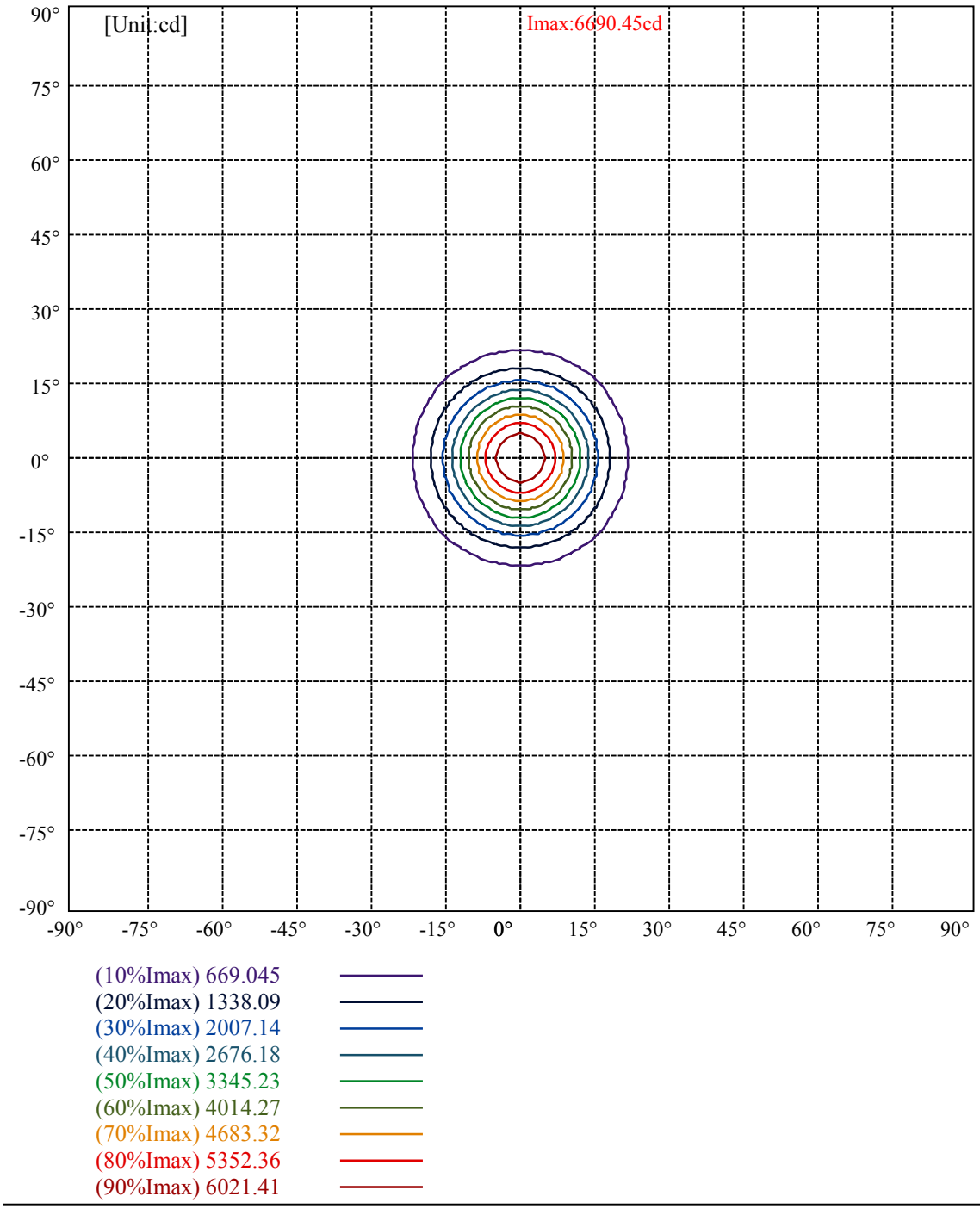





Equipment: GMS 1800 Date: 2025/2/27 Operator: NT
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.30

ISO-Intensity(V-H)






(10%Imax) 669.045
(20%Imax) 1338.09
(30%Imax) 2007.14
(40%Imax) 2676.18
(50%Imax) 3345.23
(60%Imax) 4014.27
(70%Imax) 4683.32
(80%Imax) 5352.36
(90%Imax) 6021.41

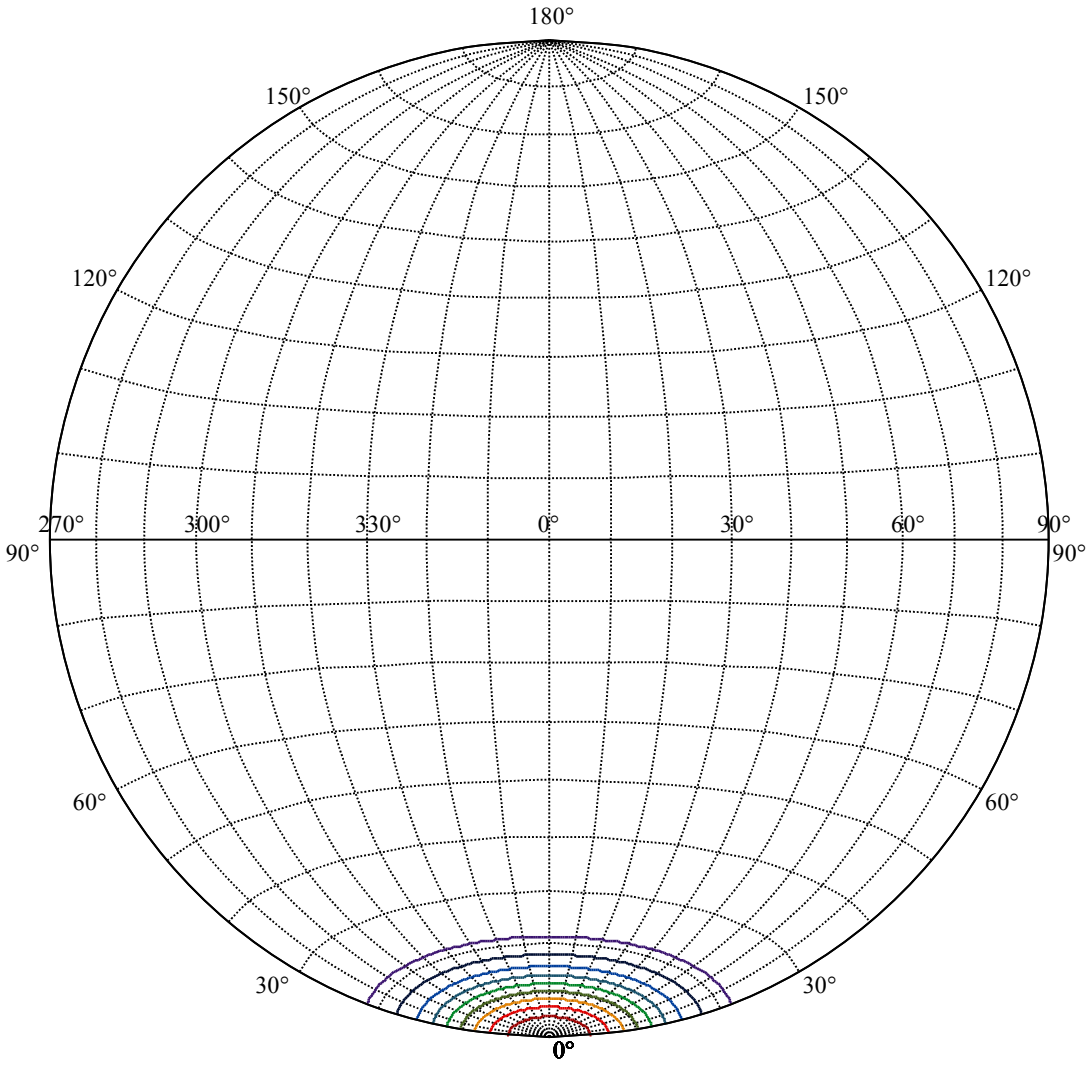
Equipment: GMS 1800
Temperature(°C): 25.0

Date: 2025/2/27
Humidity(%): 60.0%

Operator: NT
Distance(m): 7.30

ISO candela diagram on circular web






House [Unit:cd] Road

Imax:6690.45

(10%Imax) 669.045
(20%Imax) 1338.09
(30%Imax) 2007.14
(40%Imax) 2676.18
(50%Imax) 3345.23
(60%Imax) 4014.27
(70%Imax) 4683.32
(80%Imax) 5352.36
(90%Imax) 6021.41

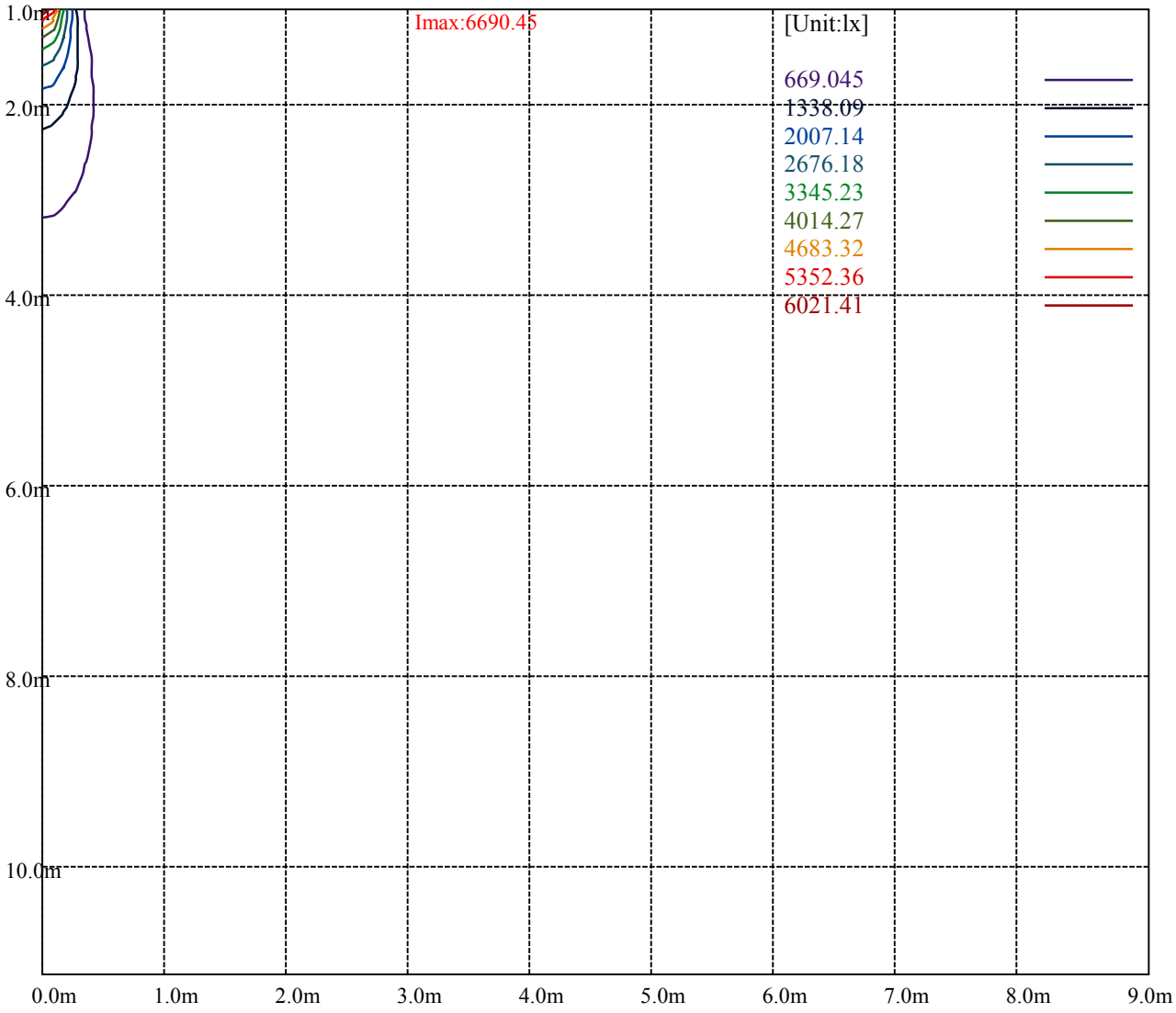
Equipment: GMS 1800
Temperature(°C): 25.0

Date: 2025/2/27
Humidity(%): 60.0%

Operator: NT
Distance(m): 7.30

## Space ISO Lux diagram






Equipment: GMS 1800
Temperature(°C): 25.0

Date: 2025/2/27
Humidity(%): 60.0%

Operator: NT
Distance(m): 7.30

NT NT 62-0216

## Luminance Limitting Curve(no luminous side)



Luminance Table

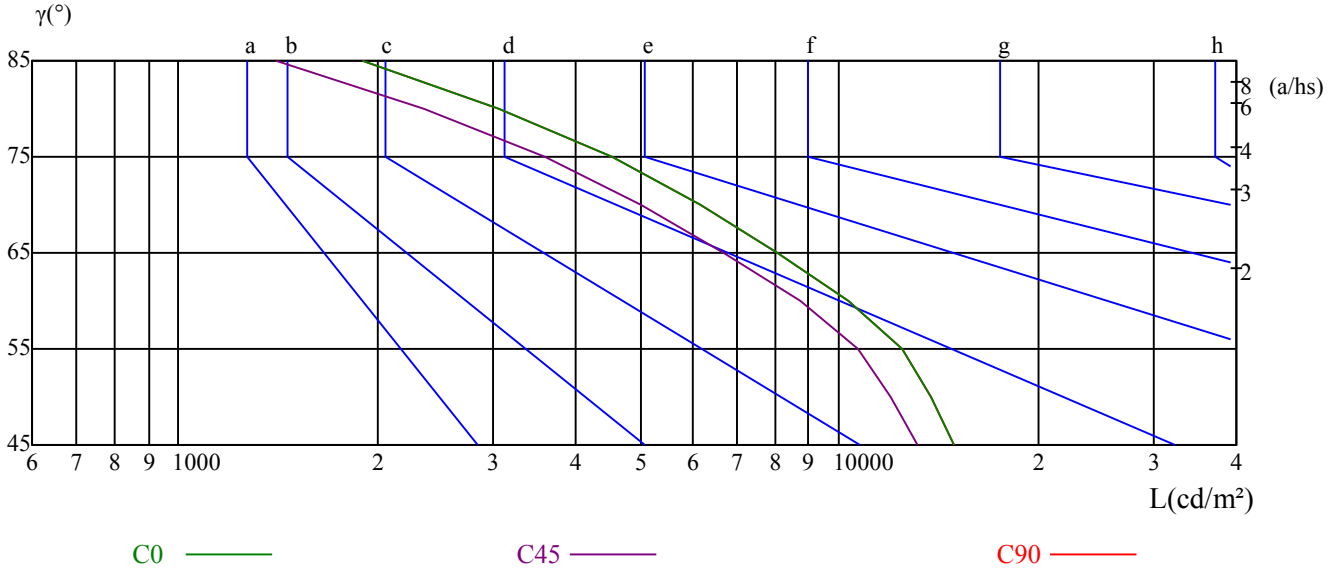
| γ | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 |
|---|---|---|---|---|---|---|---|---|---|
| C0 | 14945 | 13828 | 12463 | 10359 | 8093 | 6185 | 4547 | 3059 | 1895 |
| C45 | 13175 | 12016 | 10666 | 8719 | 6688 | 5006 | 3592 | 2348 | 1403 |
| C90 | 14945 | 13828 | 12463 | 10359 | 8093 | 6185 | 4547 | 3059 | 1895 |

| L(Hor)(65) | L(Ver)(65) | L45(65) | L(Hor)(75) | L(Ver)(75) | L45(75) | L(Hor)(85) | L(Ver)(85) | L45(85) |
|---|---|---|---|---|---|---|---|---|
| 16424 | 16424 | 16424 | 12694 | 12694 | 12694 | 12290 | 12290 | 12290 |

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 Limitting Curve




Equipment: GMS 1800
Temperature(°C): 25.0

Date: 2025/2/27
Humidity(%): 60.0%

Operator: NT
Distance(m): 7.30

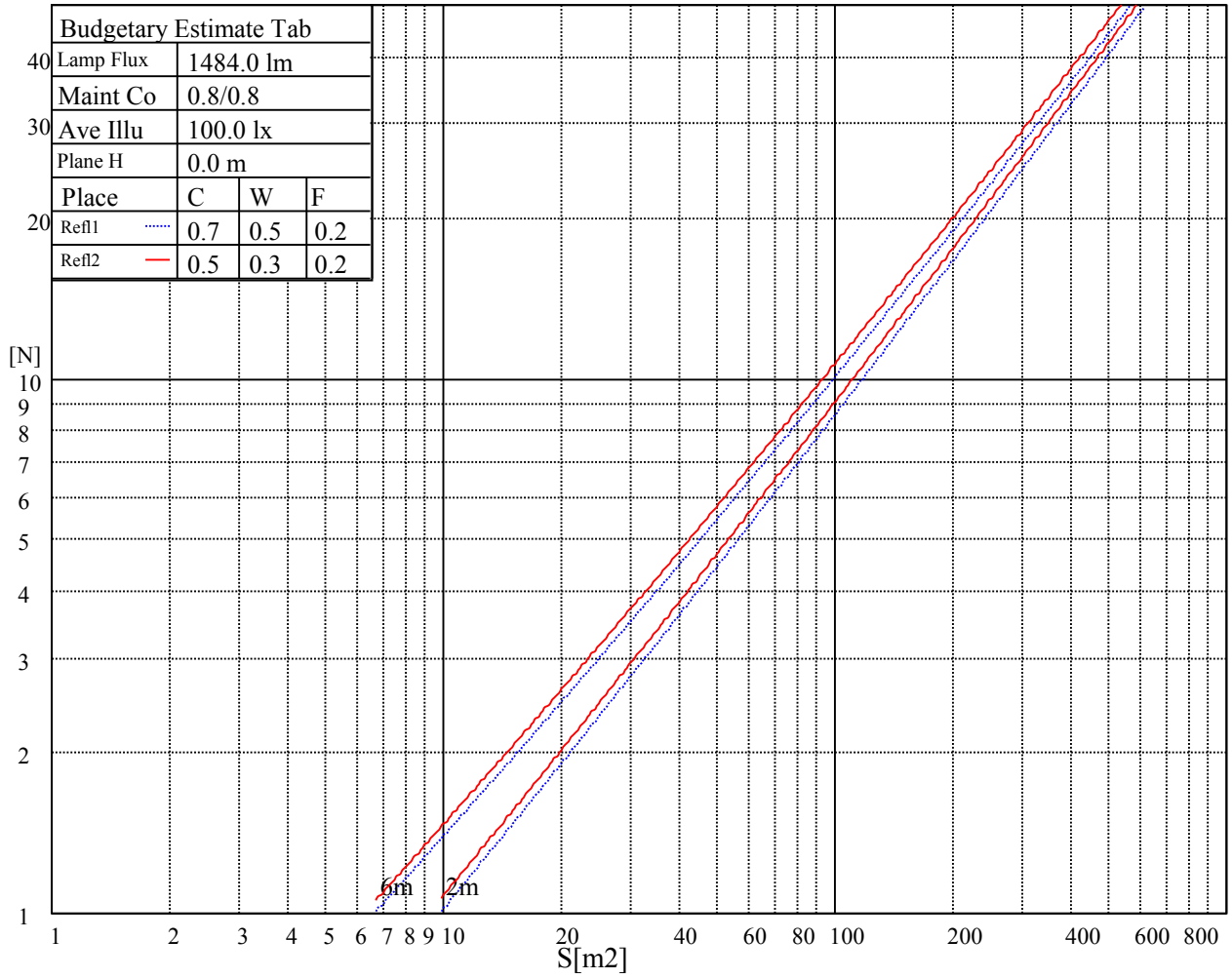
| Illumination assessment according UGR | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Rf of Ceiling | | 70 | 70 | 50 | 50 | 30 | 70 | 70 | 50 | 50 | 30 |
| Rf of Wall | | 50 | 30 | 50 | 30 | 30 | 50 | 30 | 50 | 30 | 30 |
| Rf of Floor | | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Room dimensions | | Viewed crosswise | | | | | Viewed endwise | | | | |
| X | Y | | | | | | | | | | |
| 2H | 2H | 13.49 | 14.47 | 13.86 | 14.78 | 15.09 | 13.02 | 13.99 | 13.38 | 14.30 | 14.62 |
| | 3H | 14.43 | 15.30 | 14.82 | 15.64 | 15.98 | 13.91 | 14.78 | 14.30 | 15.12 | 15.46 |
| | 4H | 14.73 | 15.53 | 15.13 | 15.89 | 16.25 | 14.18 | 14.98 | 14.58 | 15.33 | 15.70 |
| | 6H | 14.93 | 15.67 | 15.35 | 16.04 | 16.44 | 14.34 | 15.07 | 14.76 | 15.45 | 15.85 |
| | 8H | 14.97 | 15.67 | 15.39 | 16.05 | 16.46 | 14.36 | 15.06 | 14.78 | 15.44 | 15.85 |
| | 12H | 14.98 | 15.64 | 15.41 | 16.04 | 16.45 | 14.35 | 15.01 | 14.78 | 15.41 | 15.82 |
| 4H | 2H | 13.79 | 14.59 | 14.19 | 14.94 | 15.31 | 13.40 | 14.20 | 13.80 | 14.55 | 14.92 |
| | 3H | 14.83 | 15.50 | 15.26 | 15.90 | 16.32 | 14.40 | 15.07 | 14.82 | 15.46 | 15.88 |
| | 4H | 15.26 | 15.84 | 15.70 | 16.27 | 16.71 | 14.78 | 15.36 | 15.22 | 15.79 | 16.24 |
| | 6H | 15.51 | 16.02 | 15.98 | 16.47 | 16.92 | 14.99 | 15.50 | 15.46 | 15.95 | 16.40 |
| | 8H | 15.60 | 16.07 | 16.09 | 16.53 | 17.01 | 15.06 | 15.53 | 15.54 | 15.99 | 16.46 |
| | 12H | 15.67 | 16.10 | 16.16 | 16.55 | 17.07 | 15.10 | 15.53 | 15.59 | 15.98 | 16.51 |
| 8H | 4H | 15.30 | 15.77 | 15.78 | 16.23 | 16.70 | 14.85 | 15.33 | 15.34 | 15.78 | 16.26 |
| | 6H | 15.63 | 16.02 | 16.14 | 16.50 | 17.01 | 15.15 | 15.54 | 15.66 | 16.02 | 16.53 |
| | 8H | 15.83 | 16.15 | 16.36 | 16.68 | 17.17 | 15.32 | 15.65 | 15.86 | 16.17 | 16.67 |
| | 12H | 15.95 | 16.20 | 16.49 | 16.71 | 17.24 | 15.41 | 15.66 | 15.95 | 16.17 | 16.70 |
| 12H | 4H | 15.27 | 15.71 | 15.76 | 16.16 | 16.68 | 14.84 | 15.27 | 15.33 | 15.73 | 16.25 |
| | 6H | 15.68 | 16.00 | 16.21 | 16.52 | 17.02 | 15.21 | 15.53 | 15.74 | 16.05 | 16.55 |
| | 8H | 15.86 | 16.11 | 16.41 | 16.63 | 17.15 | 15.37 | 15.62 | 15.91 | 16.13 | 16.66 |

| Variation with the observer position at spacings: | | |
|---|---|---|
| S = 1.0H | 0.4/-0.5 | 0.4/-0.5 |
| S = 1.5H | 0.8/-1.1 | 0.8/-1.1 |
| S = 2.0H | 2.6/-1.5 | 2.6/-1.5 |
| Standard tables: | BK3 | BK3 |
| Uncorrected UGR | -2.1 | -2.1 |

UGR calculation is based on CIE Publ. 117 ,S/H = 0.25

## Budgetary Estimate Table






Equipment: GMS 1800 Date: 2025/2/27 Operator: NT
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.30

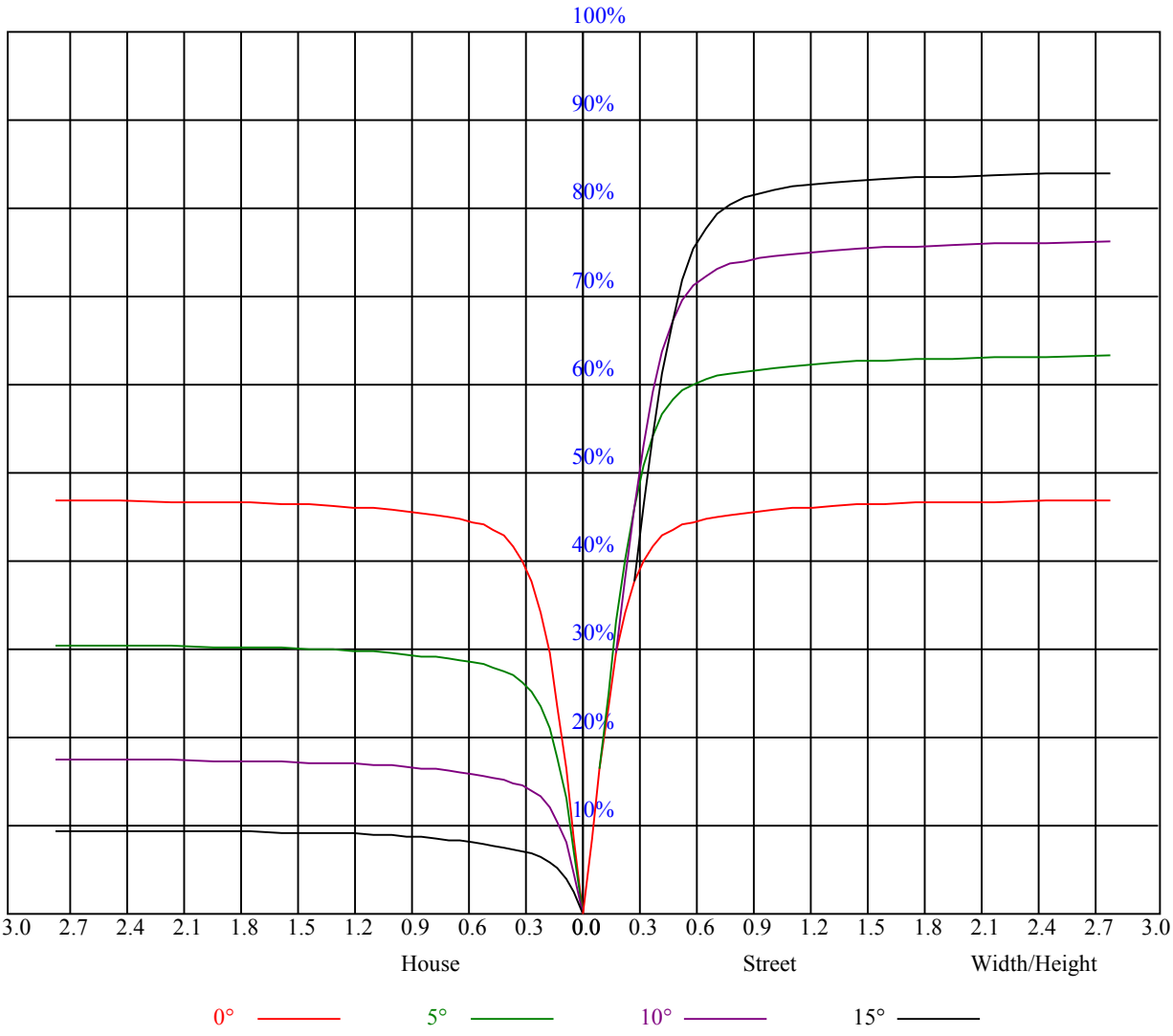
Utilization factor table for indoor luminaire



| 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 | COEFFCIENTS OF UTILIZATION RHOFC=20 CU | | | | | | | | | | | | | | | |
| 0 | 1.12 | 1.12 | 1.12 | 1.10 | 1.10 | 1.10 | 1.05 | 1.05 | 1.05 | 1.00 | 1.00 | 1.00 | 0.96 | 0.96 | 0.96 | 0.94 |
| 1 | 1.06 | 1.04 | 1.02 | 1.04 | 1.02 | 1.01 | 1.00 | 0.99 | 0.97 | 0.97 | 0.96 | 0.95 | 0.93 | 0.93 | 0.92 | 0.90 |
| 2 | 1.00 | 0.97 | 0.95 | 0.99 | 0.96 | 0.94 | 0.96 | 0.94 | 0.92 | 0.93 | 0.91 | 0.90 | 0.91 | 0.89 | 0.88 | 0.87 |
| 3 | 0.96 | 0.92 | 0.89 | 0.95 | 0.91 | 0.89 | 0.92 | 0.89 | 0.87 | 0.90 | 0.88 | 0.86 | 0.88 | 0.86 | 0.85 | 0.83 |
| 4 | 0.92 | 0.88 | 0.85 | 0.91 | 0.87 | 0.84 | 0.89 | 0.86 | 0.83 | 0.87 | 0.85 | 0.82 | 0.86 | 0.83 | 0.82 | 0.80 |
| 5 | 0.88 | 0.84 | 0.81 | 0.87 | 0.84 | 0.81 | 0.86 | 0.83 | 0.80 | 0.85 | 0.82 | 0.79 | 0.83 | 0.81 | 0.79 | 0.78 |
| 6 | 0.85 | 0.81 | 0.78 | 0.85 | 0.81 | 0.78 | 0.83 | 0.80 | 0.77 | 0.82 | 0.79 | 0.77 | 0.81 | 0.78 | 0.76 | 0.75 |
| 7 | 0.82 | 0.78 | 0.75 | 0.82 | 0.78 | 0.75 | 0.81 | 0.77 | 0.75 | 0.80 | 0.77 | 0.74 | 0.79 | 0.76 | 0.74 | 0.73 |
| 8 | 0.80 | 0.76 | 0.73 | 0.79 | 0.76 | 0.73 | 0.79 | 0.75 | 0.73 | 0.78 | 0.75 | 0.72 | 0.77 | 0.74 | 0.72 | 0.71 |
| 9 | 0.78 | 0.74 | 0.71 | 0.77 | 0.73 | 0.71 | 0.76 | 0.73 | 0.71 | 0.76 | 0.73 | 0.70 | 0.75 | 0.72 | 0.70 | 0.69 |
| 10 | 0.75 | 0.72 | 0.69 | 0.75 | 0.71 | 0.69 | 0.74 | 0.71 | 0.69 | 0.74 | 0.71 | 0.69 | 0.73 | 0.70 | 0.68 | 0.68 |

## Coefficient Utilization Curve

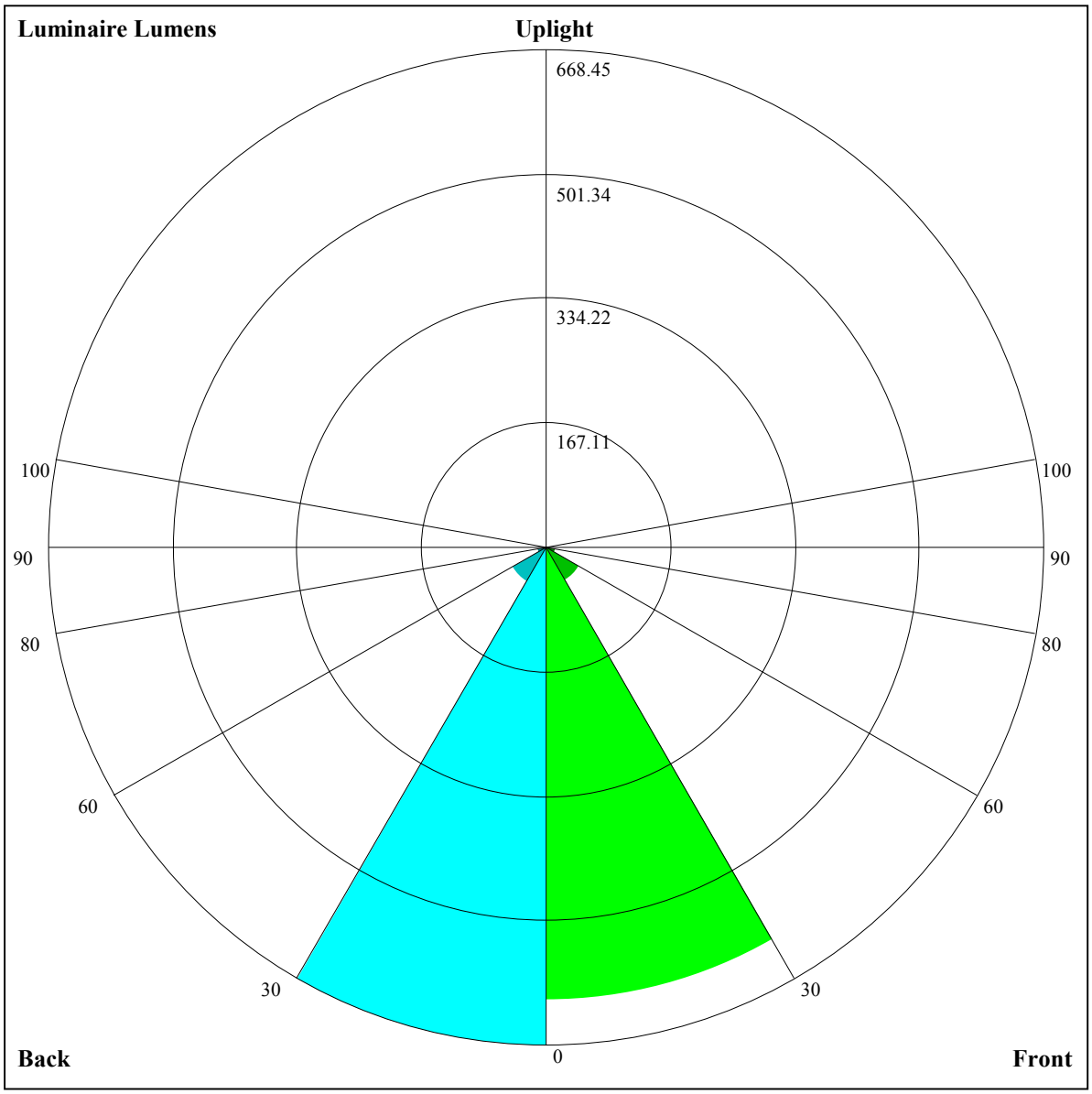





| | | |
|---|---|---|
| Equipment: GMS 1800 | Date: 2025/2/27 | Operator: NT |
| Temperature(°C): 25.0 | Humidity(%): 60.0% | Distance(m): 7.30 |

LCS Graph






Luminaire Lumens:

FL=608.71,FM=51.19,FH=13.31,FVH=1.7

BL=668.45,BM=53.3,BH=13.05,BVH=1.35

UL=0,UH=0

BUG Rating:B2-U0-G0

| | | |
|---|---|---|
| Equipment: GMS 1800 | Date: 2025/2/27 | Operator: NT |
| Temperature(°C): 25.0 | Humidity(%): 60.0% | Distance(m): 7.30 |

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 | 6690.19 | 6571.88 | 6309.70 | 6158.89 | 5867.92 | 5531.66 | 5162.90 | 4770.15 | 4359.28 |
| 45.0 | 6737.61 | 6659.28 | 6475.43 | 6231.36 | 5928.14 | 5578.02 | 5199.67 | 4794.13 | 4368.34 |
| 90.0 | 6559.09 | 6376.84 | 6029.92 | 5761.34 | 5380.85 | 4966.79 | 4538.34 | 4104.56 | 3665.45 |
| 135.0 | 6756.27 | 6656.08 | 6564.42 | 6258.54 | 6090.14 | 5772.00 | 5415.49 | 5029.14 | 4622.53 |
| 180.0 | 6690.19 | 6728.02 | 6733.35 | 6675.27 | 6552.70 | 6366.18 | 6118.38 | 5824.76 | 5484.77 |
| 225.0 | 6774.92 | 6825.54 | 6810.62 | 6767.99 | 6643.82 | 6458.91 | 6213.24 | 5905.22 | 5557.24 |
| 270.0 | 6559.09 | 6728.56 | 6843.66 | 6868.71 | 6840.46 | 6745.61 | 6585.74 | 6361.92 | 6079.48 |
| 315.0 | 6756.27 | 6787.17 | 6752.00 | 6653.95 | 6493.55 | 6271.86 | 5998.48 | 5671.81 | 5311.04 |
| 360.0 | 6690.19 | 6571.88 | 6309.70 | 6158.89 | 5867.92 | 5531.66 | 5162.90 | 4770.15 | 4359.28 |

| C/γ(°) | 9.0 | 10.0 | 11.0 | 12.0 | 13.0 | 14.0 | 15.0 | 16.0 | 17.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 3937.76 | 3511.97 | 3096.31 | 2697.70 | 2318.27 | 1967.63 | 1642.02 | 1036.49 | 953.89 |
| 45.0 | 3935.63 | 3503.44 | 3080.32 | 2677.98 | 2293.23 | 1934.05 | 1616.45 | 1444.32 | 1186.40 |
| 90.0 | 3235.40 | 2812.81 | 2414.73 | 2045.43 | 1713.43 | 1280.72 | 1048.59 | 968.65 | 790.82 |
| 135.0 | 4194.08 | 3767.76 | 3342.51 | 2926.85 | 2530.90 | 2155.21 | 1812.02 | 1510.93 | 1248.21 |
| 180.0 | 5113.87 | 4716.32 | 4300.13 | 3878.07 | 3455.48 | 3043.02 | 2641.75 | 2264.45 | 1918.60 |
| 225.0 | 5169.29 | 4760.02 | 4338.50 | 3899.39 | 3472.54 | 3054.74 | 2650.27 | 2269.78 | 1913.80 |
| 270.0 | 5747.49 | 5367.00 | 4958.79 | 4536.74 | 4099.23 | 3666.51 | 3235.93 | 2820.27 | 2425.92 |
| 315.0 | 4922.02 | 4512.76 | 4088.57 | 3658.52 | 3234.86 | 2822.93 | 2584.72 | 2062.48 | 1728.35 |
| 360.0 | 3937.76 | 3511.97 | 3096.31 | 2697.70 | 2318.27 | 1967.63 | 1642.02 | 1036.49 | 953.89 |

| C/γ(°) | 18.0 | 19.0 | 20.0 | 21.0 | 22.0 | 23.0 | 24.0 | 25.0 | 26.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 953.89 | 737.80 | 620.24 | 498.53 | 400.42 | 321.50 | 260.91 | 214.23 | 178.15 |
| 45.0 | 891.70 | 787.25 | 635.38 | 466.98 | 408.36 | 327.89 | 276.20 | 276.20 | 173.19 |
| 90.0 | 697.89 | 565.09 | 455.15 | 367.33 | 297.46 | 242.95 | 200.05 | 166.69 | 140.10 |
| 135.0 | 1021.20 | 835.21 | 681.74 | 549.58 | 445.13 | 359.87 | 291.12 | 291.12 | 269.27 |
| 180.0 | 1604.19 | 1325.48 | 1084.61 | 883.71 | 749.42 | 606.07 | 467.51 | 392.37 | 315.64 |
| 225.0 | 1596.73 | 1012.56 | 1012.56 | 932.95 | 757.84 | 613.47 | 494.05 | 395.57 | 316.76 |
| 270.0 | 2060.35 | 1859.45 | 1442.72 | 1194.39 | 1064.89 | 808.57 | 714.78 | 578.89 | 469.64 |
| 315.0 | 1548.23 | 1016.61 | 1016.61 | 825.62 | 666.87 | 536.58 | 428.03 | 342.02 | 274.87 |
| 360.0 | 953.89 | 737.80 | 620.24 | 498.53 | 400.42 | 321.50 | 260.91 | 214.23 | 178.15 |

| C/γ(°) | 27.0 | 28.0 | 29.0 | 30.0 | 31.0 | 32.0 | 33.0 | 34.0 | 35.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 150.17 | 127.36 | 109.30 | 94.70 | 82.71 | 72.95 | 65.39 | 59.15 | 54.41 |
| 45.0 | 144.74 | 122.62 | 104.82 | 90.59 | 79.03 | 69.81 | 62.51 | 58.94 | 52.70 |
| 90.0 | 119.16 | 102.00 | 88.04 | 76.90 | 68.74 | 62.56 | 57.66 | 53.82 | 50.95 |
| 135.0 | 173.09 | 146.28 | 124.27 | 106.53 | 92.24 | 80.84 | 71.78 | 64.85 | 59.31 |
| 180.0 | 278.33 | 278.33 | 176.60 | 147.99 | 125.55 | 107.70 | 92.94 | 80.95 | 71.46 |
| 225.0 | 255.85 | 208.42 | 172.29 | 143.94 | 120.97 | 102.48 | 88.19 | 76.84 | 67.94 |
| 270.0 | 381.18 | 310.84 | 275.67 | 275.67 | 179.32 | 153.64 | 133.54 | 116.71 | 102.42 |
| 315.0 | 222.97 | 183.26 | 152.30 | 128.43 | 109.40 | 94.32 | 82.23 | 72.47 | 67.73 |
| 360.0 | 150.17 | 127.36 | 109.30 | 94.70 | 82.71 | 72.95 | 65.39 | 59.15 | 54.41 |

| C/γ(°) | 36.0 | 37.0 | 38.0 | 39.0 | 40.0 | 41.0 | 42.0 | 43.0 | 44.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 50.95 | 48.23 | 46.04 | 45.03 | 43.01 | 42.26 | 41.14 | 40.29 | 39.54 |
| 45.0 | 50.68 | 47.85 | 45.51 | 43.43 | 41.99 | 40.50 | 39.27 | 38.26 | 37.30 |
| 90.0 | 48.65 | 46.63 | 44.76 | 43.38 | 41.62 | 39.97 | 39.06 | 38.05 | 37.09 |
| 135.0 | 55.10 | 51.85 | 50.20 | 46.74 | 44.76 | 43.64 | 41.62 | 40.77 | 39.54 |
| 180.0 | 64.27 | 60.80 | 54.20 | 52.01 | 48.97 | 45.83 | 44.55 | 42.95 | 41.62 |
| 225.0 | 63.73 | 55.85 | 51.85 | 50.04 | 46.52 | 44.55 | 43.70 | 42.15 | 40.77 |
| 270.0 | 91.23 | 76.42 | 66.99 | 61.02 | 55.42 | 51.26 | 48.07 | 45.56 | 43.86 |
| 315.0 | 61.07 | 56.11 | 52.44 | 49.56 | 47.11 | 45.08 | 43.54 | 42.21 | 41.09 |
| 360.0 | 50.95 | 48.23 | 46.04 | 45.03 | 43.01 | 42.26 | 41.14 | 40.29 | 39.54 |

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 | 38.80 | 38.00 | 37.36 | 36.72 | 36.02 | 35.28 | 34.43 | 33.41 | 32.29 |
| 45.0 | 36.40 | 35.81 | 35.22 | 34.37 | 33.47 | 32.72 | 31.81 | 30.75 | 29.58 |
| 90.0 | 36.40 | 35.60 | 34.85 | 33.95 | 33.20 | 32.24 | 31.01 | 29.84 | 28.83 |
| 135.0 | 38.48 | 37.41 | 36.61 | 35.76 | 34.85 | 33.79 | 33.04 | 32.03 | 30.91 |
| 180.0 | 40.23 | 38.90 | 37.68 | 36.66 | 35.70 | 34.75 | 33.73 | 32.77 | 31.81 |
| 225.0 | 39.65 | 38.58 | 37.57 | 36.61 | 35.86 | 35.06 | 34.37 | 33.73 | 32.93 |
| 270.0 | 42.58 | 41.51 | 40.55 | 39.75 | 39.01 | 38.26 | 37.68 | 37.14 | 36.56 |
| 315.0 | 40.29 | 39.49 | 38.90 | 38.42 | 37.89 | 37.36 | 36.61 | 35.97 | 35.44 |
| 360.0 | 38.80 | 38.00 | 37.36 | 36.72 | 36.02 | 35.28 | 34.43 | 33.41 | 32.29 |

| C/γ(°) | 54.0 | 55.0 | 56.0 | 57.0 | 58.0 | 59.0 | 60.0 | 61.0 | 62.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 31.23 | 29.79 | 28.30 | 26.80 | 25.47 | 24.09 | 23.13 | 21.21 | 19.88 |
| 45.0 | 28.35 | 27.55 | 25.69 | 24.83 | 23.45 | 22.06 | 20.84 | 19.56 | 18.33 |
| 90.0 | 27.39 | 26.06 | 24.67 | 23.45 | 22.70 | 20.84 | 19.56 | 18.86 | 17.27 |
| 135.0 | 29.74 | 28.67 | 27.44 | 26.06 | 24.73 | 23.39 | 22.28 | 21.10 | 20.20 |
| 180.0 | 30.91 | 29.74 | 28.67 | 27.39 | 26.59 | 24.89 | 23.50 | 22.33 | 20.89 |
| 225.0 | 31.97 | 30.85 | 29.68 | 28.46 | 26.91 | 25.26 | 24.09 | 22.44 | 21.00 |
| 270.0 | 36.08 | 35.44 | 34.59 | 33.89 | 32.29 | 30.96 | 30.11 | 28.51 | 26.75 |
| 315.0 | 34.53 | 32.88 | 32.08 | 30.75 | 29.42 | 27.82 | 26.22 | 24.78 | 23.34 |
| 360.0 | 31.23 | 29.79 | 28.30 | 26.80 | 25.47 | 24.09 | 23.13 | 21.21 | 19.88 |

| C/γ(°) | 63.0 | 64.0 | 65.0 | 66.0 | 67.0 | 68.0 | 69.0 | 70.0 | 71.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 19.08 | 17.91 | 16.79 | 15.72 | 14.65 | 13.70 | 12.84 | 11.99 | 11.14 |
| 45.0 | 17.27 | 16.15 | 15.08 | 14.18 | 13.43 | 12.58 | 11.88 | 11.19 | 10.60 |
| 90.0 | 16.73 | 15.67 | 14.76 | 13.86 | 13.06 | 12.20 | 11.40 | 10.66 | 9.86 |
| 135.0 | 18.86 | 18.12 | 17.16 | 16.25 | 15.19 | 14.12 | 13.11 | 12.20 | 11.35 |
| 180.0 | 19.66 | 18.39 | 17.16 | 15.99 | 14.92 | 13.86 | 12.90 | 11.94 | 11.03 |
| 225.0 | 19.77 | 18.60 | 17.27 | 15.99 | 14.92 | 13.80 | 12.74 | 11.67 | 10.71 |
| 270.0 | 24.73 | 22.97 | 21.32 | 19.77 | 18.28 | 17.00 | 15.77 | 14.65 | 13.59 |
| 315.0 | 21.85 | 20.57 | 19.29 | 18.01 | 16.79 | 15.72 | 14.71 | 13.80 | 12.79 |
| 360.0 | 19.08 | 17.91 | 16.79 | 15.72 | 14.65 | 13.70 | 12.84 | 11.99 | 11.14 |

| C/γ(°) | 72.0 | 73.0 | 74.0 | 75.0 | 76.0 | 77.0 | 78.0 | 79.0 | 80.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 10.39 | 9.65 | 8.85 | 8.10 | 7.30 | 6.71 | 6.13 | 5.65 | 5.17 |
| 45.0 | 9.91 | 9.27 | 8.69 | 8.05 | 7.46 | 7.03 | 6.45 | 6.08 | 5.60 |
| 90.0 | 9.17 | 8.37 | 7.57 | 6.77 | 6.18 | 5.70 | 5.22 | 4.64 | 4.26 |
| 135.0 | 10.50 | 9.65 | 8.90 | 8.21 | 7.41 | 6.55 | 5.97 | 5.49 | 4.90 |
| 180.0 | 10.23 | 9.43 | 8.58 | 7.78 | 6.98 | 6.23 | 5.38 | 4.90 | 4.10 |
| 225.0 | 9.97 | 9.06 | 8.21 | 7.41 | 6.66 | 5.97 | 5.17 | 4.53 | 4.00 |
| 270.0 | 12.52 | 11.62 | 10.76 | 9.75 | 8.95 | 8.15 | 7.35 | 6.45 | 5.65 |
| 315.0 | 11.99 | 11.08 | 10.28 | 9.65 | 8.69 | 8.05 | 7.14 | 6.34 | 5.86 |
| 360.0 | 10.39 | 9.65 | 8.85 | 8.10 | 7.30 | 6.71 | 6.13 | 5.65 | 5.17 |

| C/γ(°) | 81.0 | 82.0 | 83.0 | 84.0 | 85.0 | 86.0 | 87.0 | 88.0 | 89.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 4.69 | 4.26 | 3.78 | 3.36 | 3.04 | 2.56 | 2.24 | 1.81 | 1.49 |
| 45.0 | 5.12 | 4.58 | 4.21 | 3.73 | 3.25 | 2.82 | 2.45 | 2.03 | 1.81 |
| 90.0 | 3.89 | 3.52 | 3.09 | 2.66 | 2.24 | 1.87 | 1.65 | 1.49 | 1.33 |
| 135.0 | 4.37 | 3.89 | 3.41 | 3.04 | 2.45 | 2.08 | 1.65 | 1.28 | 1.07 |
| 180.0 | 3.68 | 3.25 | 2.82 | 2.50 | 2.03 | 1.71 | 1.28 | 0.96 | 0.59 |
| 225.0 | 3.57 | 3.20 | 2.77 | 2.40 | 1.97 | 1.71 | 1.33 | 1.01 | 0.64 |
| 270.0 | 5.22 | 4.53 | 3.94 | 3.46 | 2.98 | 2.61 | 2.18 | 1.81 | 1.39 |
| 315.0 | 5.38 | 4.80 | 4.42 | 3.94 | 3.46 | 3.14 | 2.66 | 2.18 | 1.81 |
| 360.0 | 4.69 | 4.26 | 3.78 | 3.36 | 3.04 | 2.56 | 2.24 | 1.81 | 1.49 |

## Intensity data(cd)

| C/γ(°) | 90.0 |
|---|---|
| 0.0 | 1.44 |
| 45.0 | 1.65 |
| 90.0 | 1.28 |
| 135.0 | 0.91 |
| 180.0 | 0.32 |
| 225.0 | 0.43 |
| 270.0 | 1.01 |
| 315.0 | 1.49 |
| 360.0 | 1.44 |