NATA LIGHTING CO.,LTD.
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Tel:+86-750-3770000 Fax:+86-750-3771111
Address:380JinOu Road,GaoXin Zone,Jiang Men City,Guangdong,China

NT

Client:
LumCAT: 1-1380-L
Luminaire: 92.70.428.00
Report No: 20231204-B017
Ballast type: AC

| | |
|---|---|
| Test No: 20231204-C017 | Voltage(V): 37.790 |
| LampCAT: CREE CXA1507 LES8.9 | Current(A): 0.330 |
| Lamp flux(lm): 1242.2 | Power (W): 12.470 |
| Number of Lamps: 1 | PF: 0.000 |
| Length(mm): 0 | Width(mm): 0 |
| Phm Type: C | Height(mm): 0 |

## Photometric Results

Lumens(lm): 1155.62, Efficiency(%): 93.03% , Luminous Efficacy(lm/W): 92.67
Central intensity(cd): 1700.463, Maximum intensity(cd): 1700.463
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=51.6
[C90/270]Total=51.6
Field angle(10%Imax): [C0/180]Total=71.0
[C90/270]Total=71.0
Beam angle of C0 plane : 51.60
Aveage BeamAngle(IEC 61341):51.60
Maximum s/h(1/2): C0_180=0.84 C90_270=0.84
Maximum s/h(1/4): C0_180=0.76 C90_270=0.76
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 93.03%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.913%

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 0.0 | 1700.463 | 0.000 | 0 | 0.00% | 0.00% |
| 1.0 | 1690.499 | 1.623 | 1.623 | 0.13% | 0.14% |
| 2.0 | 1676.661 | 4.833 | 6.455 | 0.39% | 0.56% |
| 3.0 | 1668.911 | 8.002 | 14.457 | 0.64% | 1.25% |
| 4.0 | 1664.275 | 11.157 | 25.614 | 0.90% | 2.22% |
| 5.0 | 1655.765 | 14.283 | 39.897 | 1.15% | 3.45% |
| 6.0 | 1641.788 | 17.330 | 57.226 | 1.40% | 4.95% |
| 7.0 | 1628.295 | 20.297 | 77.524 | 1.63% | 6.71% |
| 8.0 | 1609.129 | 23.170 | 100.693 | 1.87% | 8.71% |
| 9.0 | 1586.919 | 25.902 | 126.595 | 2.09% | 10.95% |
| 10.0 | 1566.922 | 28.541 | 155.137 | 2.30% | 13.42% |
| 11.0 | 1547.341 | 31.118 | 186.254 | 2.51% | 16.12% |
| 12.0 | 1527.967 | 33.618 | 219.872 | 2.71% | 19.03% |
| 13.0 | 1506.448 | 36.011 | 255.883 | 2.90% | 22.14% |
| 14.0 | 1487.420 | 38.321 | 294.204 | 3.09% | 25.46% |
| 15.0 | 1463.065 | 40.506 | 334.71 | 3.26% | 28.96% |
| 16.0 | 1434.765 | 42.461 | 377.171 | 3.42% | 32.64% |
| 17.0 | 1405.151 | 44.225 | 421.396 | 3.56% | 36.47% |
| 18.0 | 1366.473 | 45.698 | 467.094 | 3.68% | 40.42% |
| 19.0 | 1326.203 | 46.847 | 513.941 | 3.77% | 44.47% |
| 20.0 | 1260.035 | 47.335 | 561.277 | 3.81% | 48.57% |
| 21.0 | 1175.157 | 46.761 | 608.037 | 3.76% | 52.62% |
| 22.0 | 1141.543 | 46.555 | 654.592 | 3.75% | 56.64% |
| 23.0 | 1081.547 | 46.646 | 701.239 | 3.76% | 60.68% |
| 24.0 | 1006.827 | 45.659 | 746.898 | 3.68% | 64.63% |
| 25.0 | 925.346 | 43.933 | 790.831 | 3.54% | 68.43% |
| 26.0 | 831.473 | 41.470 | 832.301 | 3.34% | 72.02% |
| 27.0 | 741.378 | 38.480 | 870.782 | 3.10% | 75.35% |
| 28.0 | 649.886 | 35.224 | 906.005 | 2.84% | 78.40% |
| 29.0 | 556.477 | 31.562 | 937.567 | 2.54% | 81.13% |
| 30.0 | 468.817 | 27.683 | 965.25 | 2.23% | 83.53% |
| 31.0 | 393.225 | 23.989 | 989.239 | 1.93% | 85.60% |
| 32.0 | 327.901 | 20.659 | 1009.899 | 1.66% | 87.39% |
| 33.0 | 270.472 | 17.628 | 1027.527 | 1.42% | 88.92% |
| 34.0 | 236.699 | 15.348 | 1042.876 | 1.24% | 90.24% |
| 35.0 | 197.017 | 13.470 | 1056.345 | 1.08% | 91.41% |
| 36.0 | 141.671 | 10.784 | 1067.129 | 0.87% | 92.34% |
| 37.0 | 112.831 | 8.300 | 1075.429 | 0.67% | 93.06% |

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 38.0 | 92.302 | 6.847 | 1082.277 | 0.55% | 93.65% |
| 39.0 | 75.143 | 5.715 | 1087.992 | 0.46% | 94.15% |
| 40.0 | 62.854 | 4.813 | 1092.805 | 0.39% | 94.56% |
| 41.0 | 52.800 | 4.118 | 1096.923 | 0.33% | 94.92% |
| 42.0 | 44.802 | 3.546 | 1100.469 | 0.29% | 95.23% |
| 43.0 | 38.664 | 3.092 | 1103.561 | 0.25% | 95.50% |
| 44.0 | 33.994 | 2.742 | 1106.303 | 0.22% | 95.73% |
| 45.0 | 30.278 | 2.470 | 1108.773 | 0.20% | 95.95% |
| 46.0 | 27.096 | 2.244 | 1111.017 | 0.18% | 96.14% |
| 47.0 | 24.418 | 2.049 | 1113.066 | 0.16% | 96.32% |
| 48.0 | 22.404 | 1.893 | 1114.959 | 0.15% | 96.48% |
| 49.0 | 20.668 | 1.769 | 1116.728 | 0.14% | 96.63% |
| 50.0 | 19.125 | 1.659 | 1118.387 | 0.13% | 96.78% |
| 51.0 | 17.858 | 1.565 | 1119.951 | 0.13% | 96.91% |
| 52.0 | 16.772 | 1.486 | 1121.437 | 0.12% | 97.04% |
| 53.0 | 15.880 | 1.420 | 1122.858 | 0.11% | 97.17% |
| 54.0 | 15.022 | 1.362 | 1124.22 | 0.11% | 97.28% |
| 55.0 | 14.316 | 1.310 | 1125.529 | 0.11% | 97.40% |
| 56.0 | 13.679 | 1.265 | 1126.794 | 0.10% | 97.51% |
| 57.0 | 13.140 | 1.226 | 1128.021 | 0.10% | 97.61% |
| 58.0 | 12.628 | 1.192 | 1129.212 | 0.10% | 97.72% |
| 59.0 | 12.157 | 1.159 | 1130.371 | 0.09% | 97.82% |
| 60.0 | 11.735 | 1.129 | 1131.5 | 0.09% | 97.91% |
| 61.0 | 11.347 | 1.102 | 1132.601 | 0.09% | 98.01% |
| 62.0 | 11.002 | 1.077 | 1133.678 | 0.09% | 98.10% |
| 63.0 | 10.635 | 1.052 | 1134.73 | 0.08% | 98.19% |
| 64.0 | 10.330 | 1.029 | 1135.759 | 0.08% | 98.28% |
| 65.0 | 10.019 | 1.007 | 1136.766 | 0.08% | 98.37% |
| 66.0 | 9.735 | 0.986 | 1137.752 | 0.08% | 98.45% |
| 67.0 | 9.479 | 0.966 | 1138.718 | 0.08% | 98.54% |
| 68.0 | 9.216 | 0.947 | 1139.665 | 0.08% | 98.62% |
| 69.0 | 8.967 | 0.928 | 1140.593 | 0.07% | 98.70% |
| 70.0 | 8.732 | 0.909 | 1141.502 | 0.07% | 98.78% |
| 71.0 | 8.490 | 0.890 | 1142.392 | 0.07% | 98.86% |
| 72.0 | 8.241 | 0.870 | 1143.262 | 0.07% | 98.93% |
| 73.0 | 7.999 | 0.849 | 1144.111 | 0.07% | 99.00% |
| 74.0 | 7.777 | 0.829 | 1144.94 | 0.07% | 99.08% |
| 75.0 | 7.549 | 0.810 | 1145.75 | 0.07% | 99.15% |

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 76.0 | 7.321 | 0.789 | 1146.539 | 0.06% | 99.21% |
| 77.0 | 7.127 | 0.770 | 1147.31 | 0.06% | 99.28% |
| 78.0 | 6.905 | 0.751 | 1148.061 | 0.06% | 99.35% |
| 79.0 | 6.691 | 0.731 | 1148.791 | 0.06% | 99.41% |
| 80.0 | 6.456 | 0.709 | 1149.5 | 0.06% | 99.47% |
| 81.0 | 6.276 | 0.688 | 1150.188 | 0.06% | 99.53% |
| 82.0 | 6.075 | 0.670 | 1150.858 | 0.05% | 99.59% |
| 83.0 | 5.895 | 0.651 | 1151.509 | 0.05% | 99.64% |
| 84.0 | 5.729 | 0.633 | 1152.142 | 0.05% | 99.70% |
| 85.0 | 5.563 | 0.616 | 1152.759 | 0.05% | 99.75% |
| 86.0 | 5.411 | 0.600 | 1153.358 | 0.05% | 99.80% |
| 87.0 | 5.286 | 0.585 | 1153.944 | 0.05% | 99.86% |
| 88.0 | 5.148 | 0.572 | 1154.515 | 0.05% | 99.90% |
| 89.0 | 4.996 | 0.556 | 1155.071 | 0.04% | 99.95% |
| 90.0 | 4.961 | 0.546 | 1155.617 | 0.04% | 100.00% |

## Zonal flux distribution table



ZONAL LUMEN SUMMARY

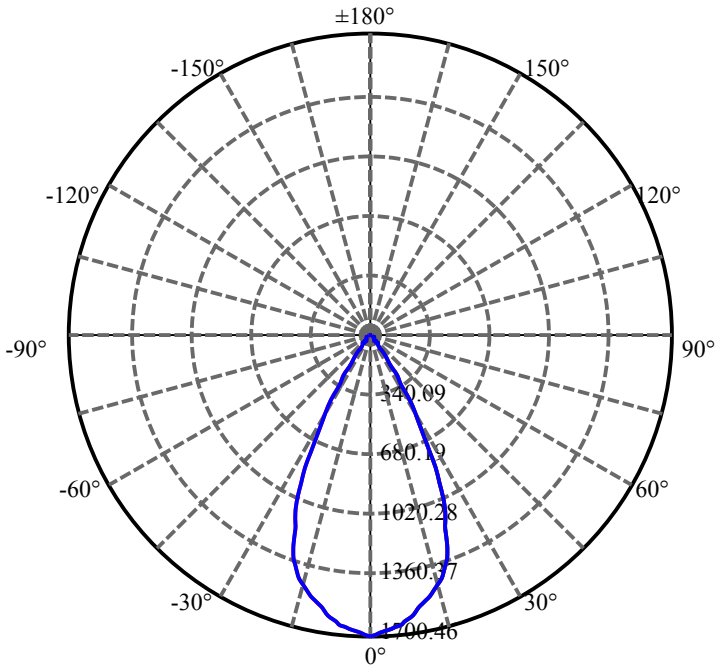
| Zone | Lumens | %Lamp | %Fixt |
|---|---|---|---|
| 0-30 | 965.25 | 77.71% | 83.53% |
| 0-40 | 1092.80 | 87.98% | 94.56% |
| 0-60 | 1131.50 | 91.09% | 97.91% |
| 0-90 | 1155.07 | 92.99% | 99.95% |
| 0-120 | 1155.07 | 92.99% | 99.95% |
| 0-180 | 1155.62 | 93.03% | 100.00% |
| 60-90 | 23.57 | 1.90% | 2.04% |
| 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% |
| 0-28.59 | 924.49 | 74.43% | 80.00% |

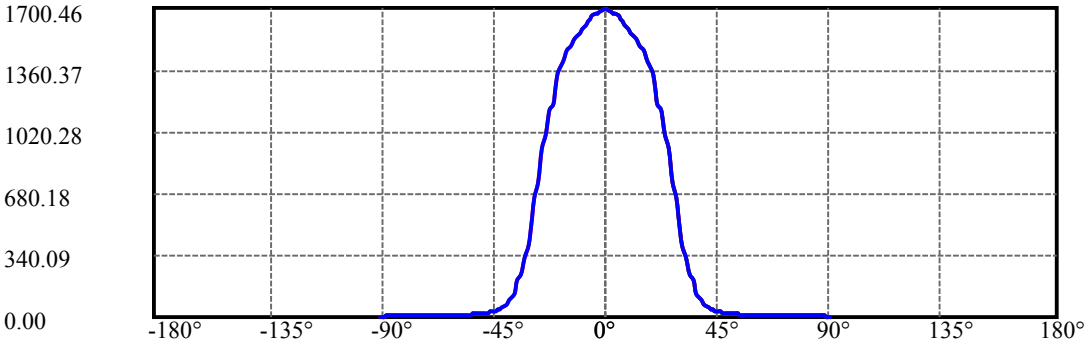
ZONAL LUMEN SUMMARY

| | |
|---|---|
| 0-10 | 155.14 |
| 10-20 | 406.14 |
| 20-30 | 403.97 |
| 30-40 | 127.55 |
| 40-50 | 25.58 |
| 50-60 | 13.11 |
| 60-70 | 10.00 |
| 70-80 | 8.00 |
| 80-90 | 5.57 |
| 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:

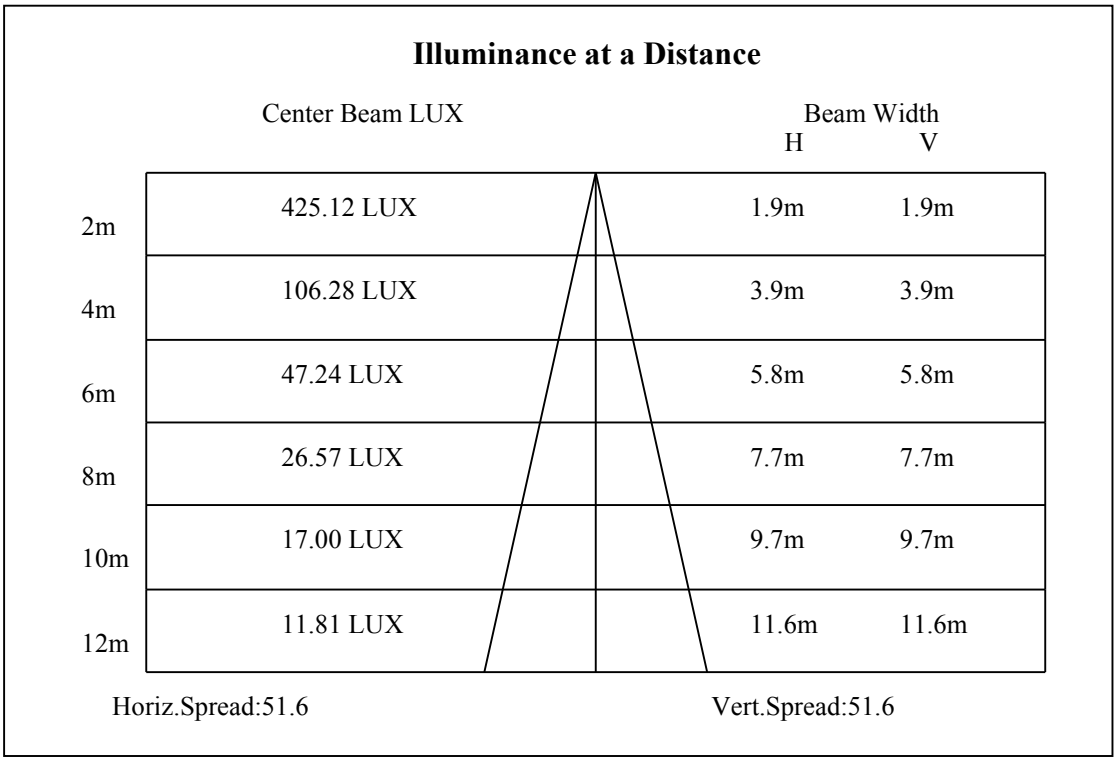
C90/C270:

Field angle(10%Imax):C0/180Left:35.5 Right:35.5
:C90/270Left:35.5 Right:35.5

Beam Angle(50%Imax):C0/180Left:25.8 Right:25.8
:C90/270Left:25.8 Right:25.8

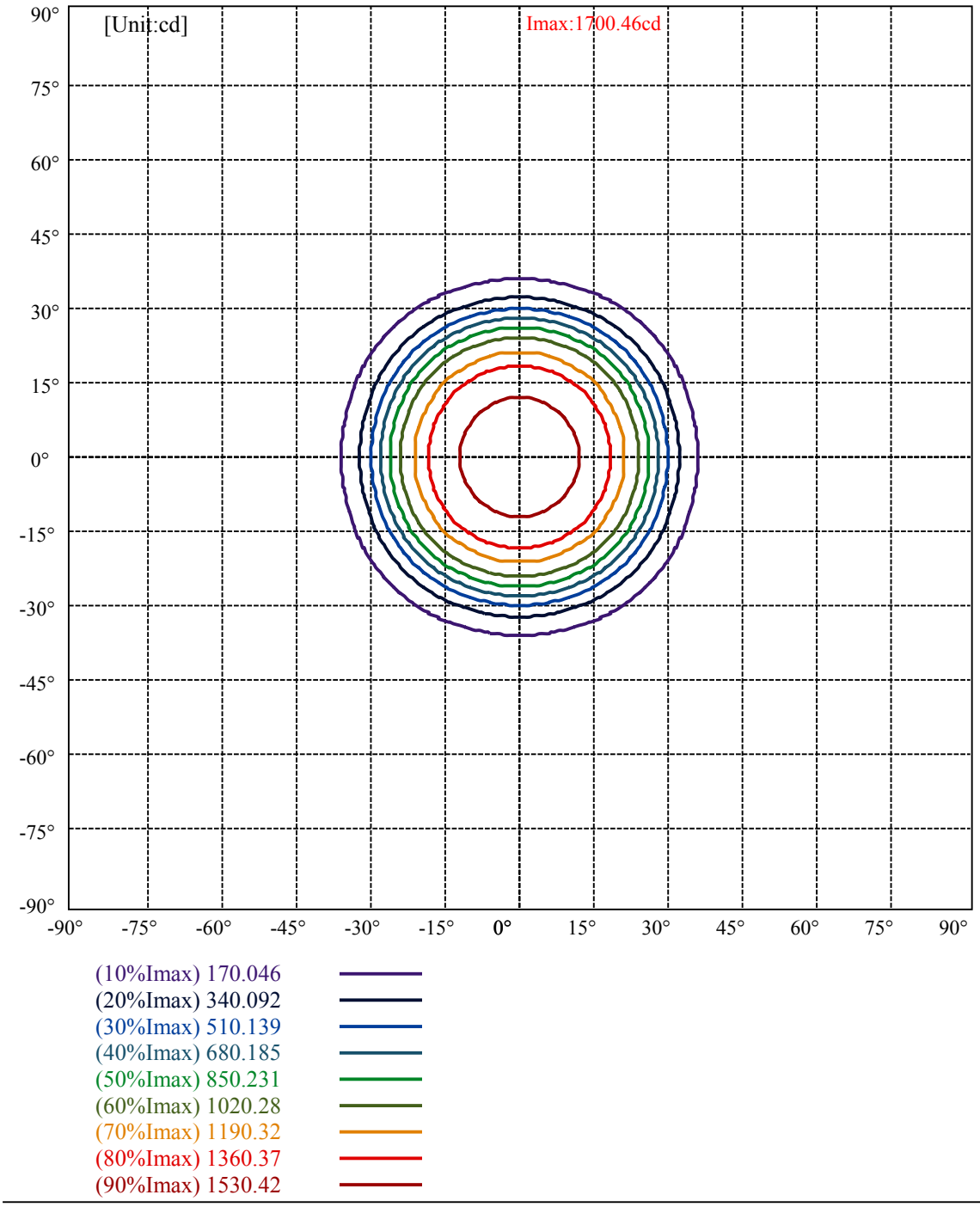
Lux distance Curve





## ISO-Intensity(V-H)





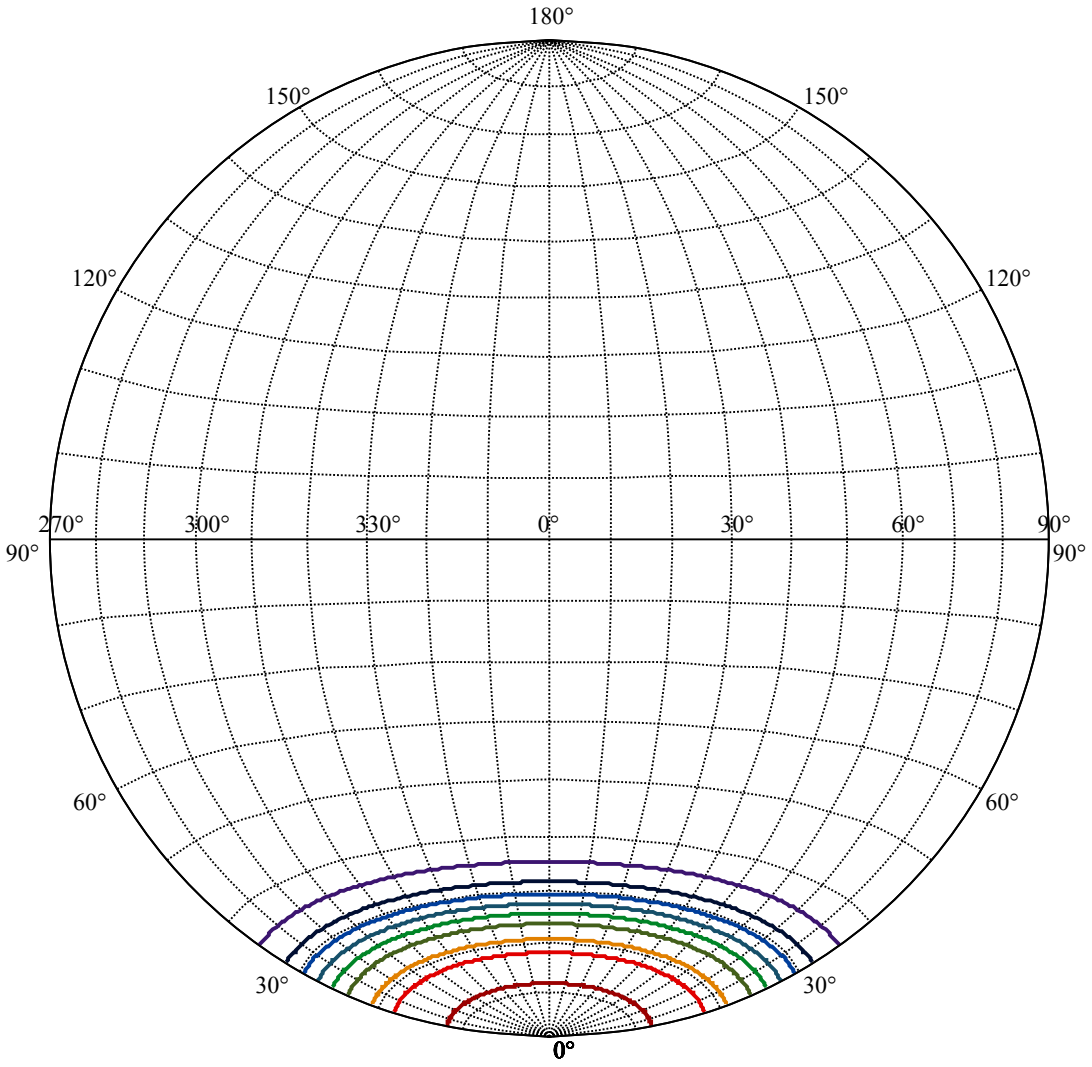

Equipment: GMS1980
Temperature(°C): 0.0

Date: 2023/12/04
Humidity(%): 0.0%

Operator: NT07
Distance(m): 7.44

## ISO candela diagram on circular web






[Unit:cd]

Imax:1700.46

(10%Imax) 170.046
(20%Imax) 340.092
(30%Imax) 510.139
(40%Imax) 680.185
(50%Imax) 850.231
(60%Imax) 1020.28
(70%Imax) 1190.32
(80%Imax) 1360.37
(90%Imax) 1530.42

Equipment: GMS1980
Temperature(°C): 0.0

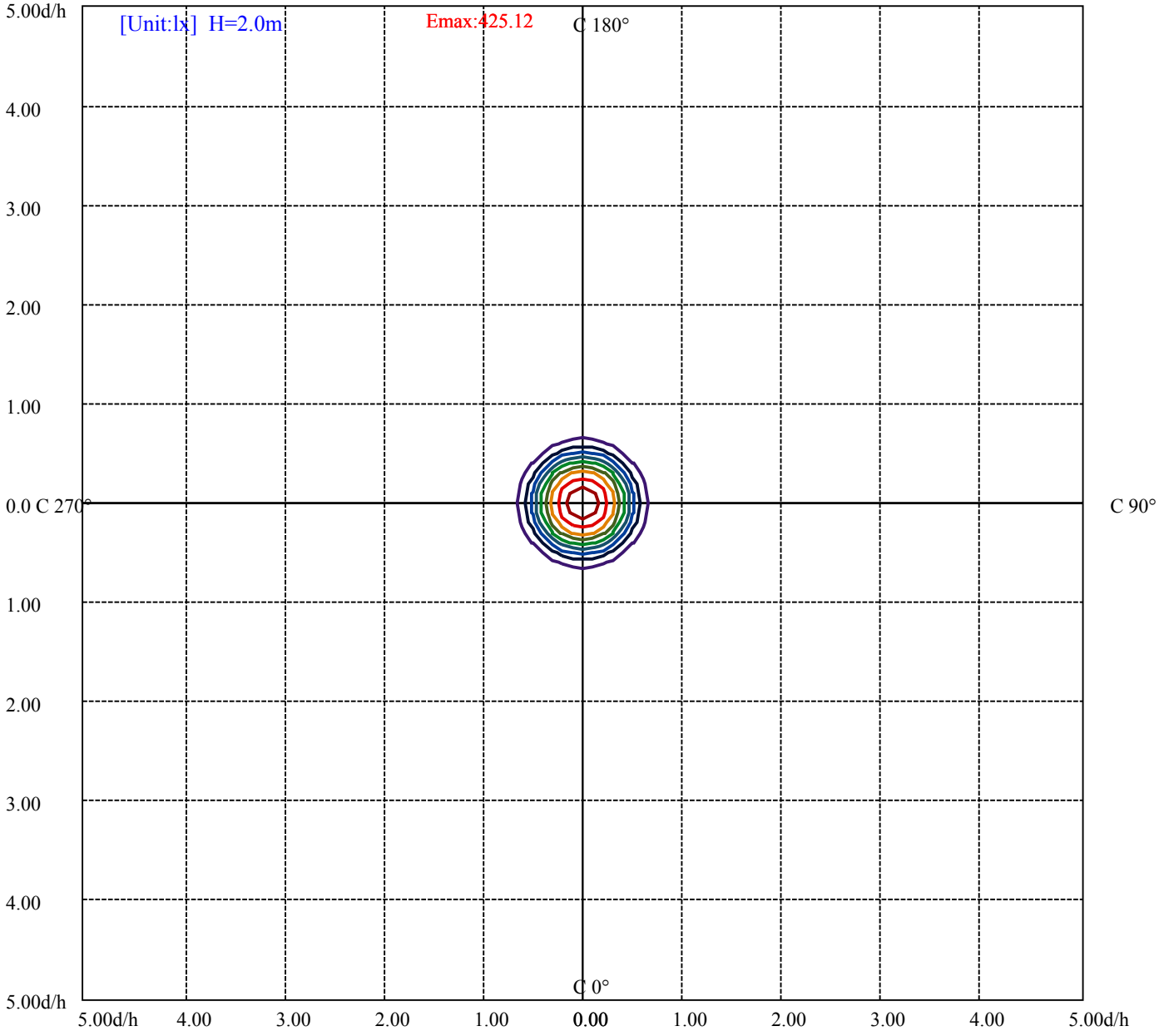
Date: 2023/12/04
Humidity(%): 0.0%

Operator: NT07
Distance(m): 7.44

NT 1-1380-L

ISO illuminance diagram






(10%Emax) 42.5115
(20%Emax) 85.023
(30%Emax) 127.5345
(40%Emax) 170.046
(50%Emax) 212.5578
(60%Emax) 255.07
(70%Emax) 297.58
(80%Emax) 340.0925
(90%Emax) 382.6025

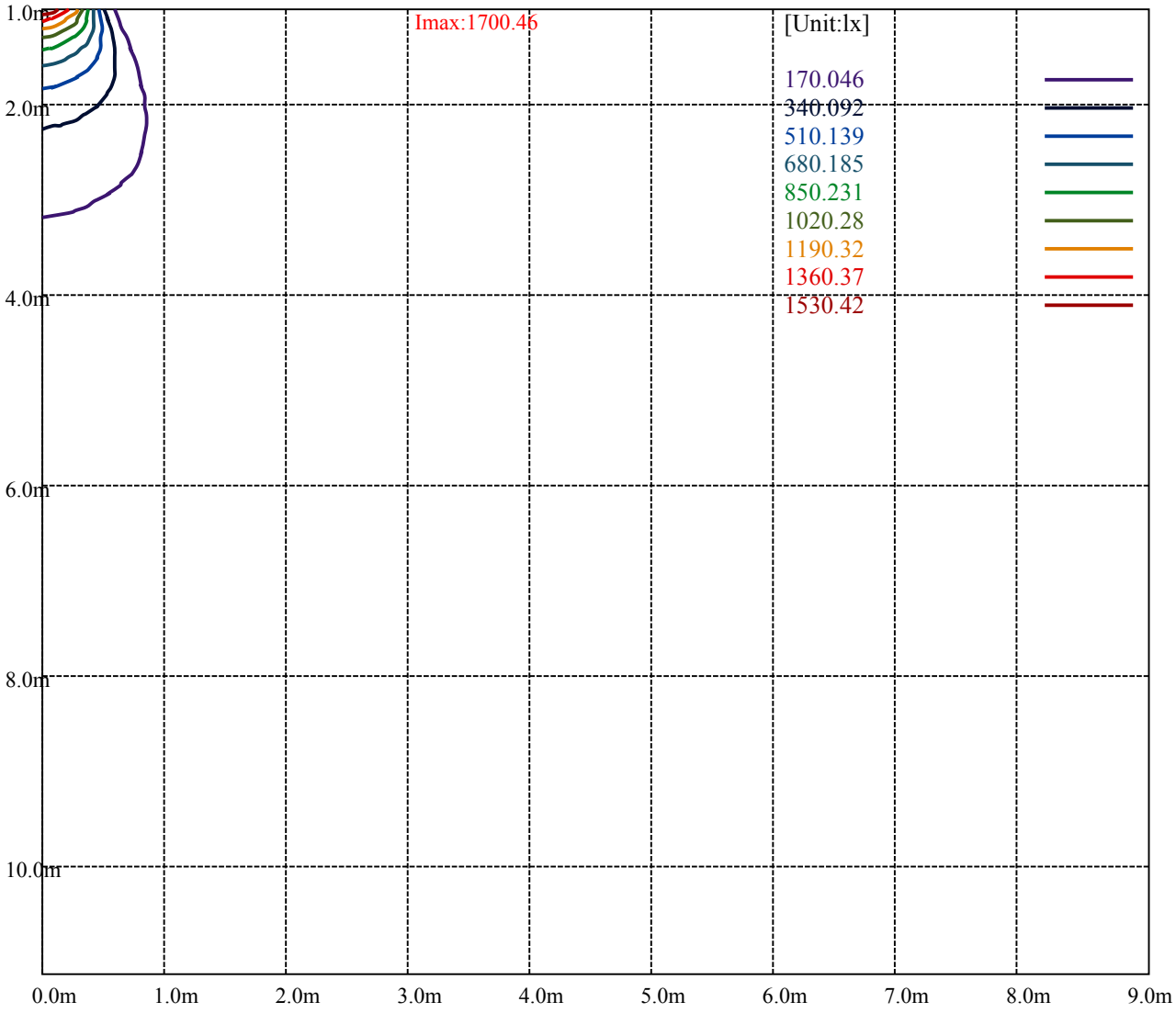
Equipment: GMS1980
Temperature(°C): 0.0

Date: 2023/12/04
Humidity(%): 0.0%

Operator: NT07
Distance(m): 7.44

Space ISO Lux diagram






Equipment: GMS1980
Temperature(°C): 0.0

Date: 2023/12/04
Humidity(%): 0.0%

Operator: NT07
Distance(m): 7.44

## Luminance Limitting Curve(no luminous side)



Luminance Table

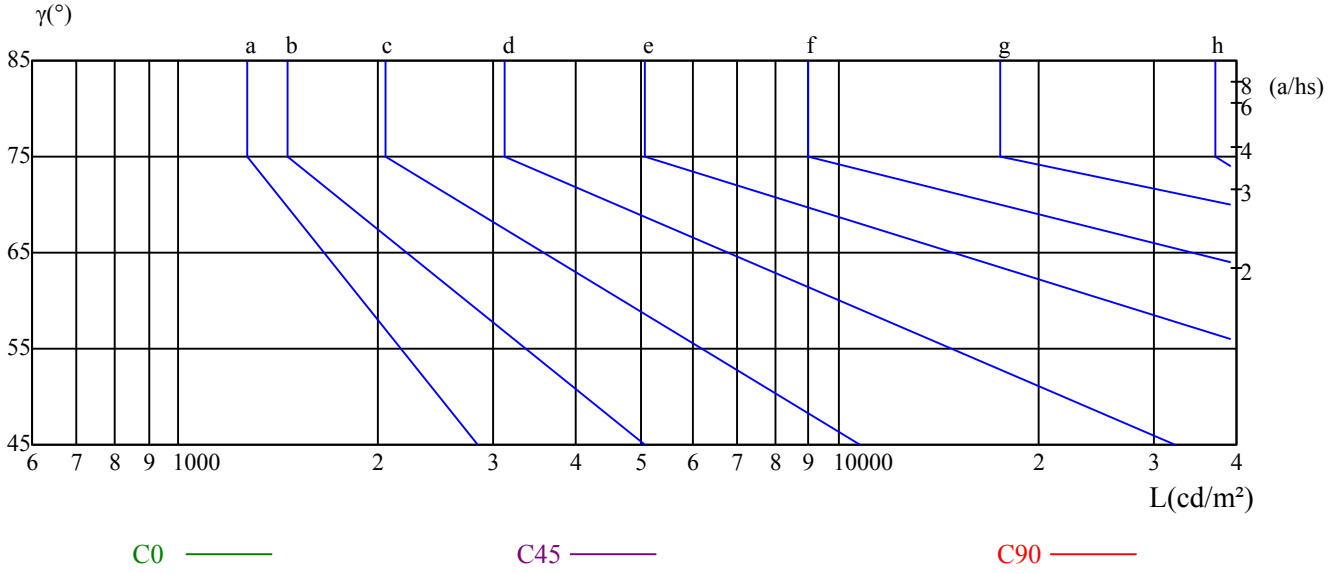
| γ | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 |
|---|---|---|---|---|---|---|---|---|---|
| C0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C90 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| 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 Limitting Curve

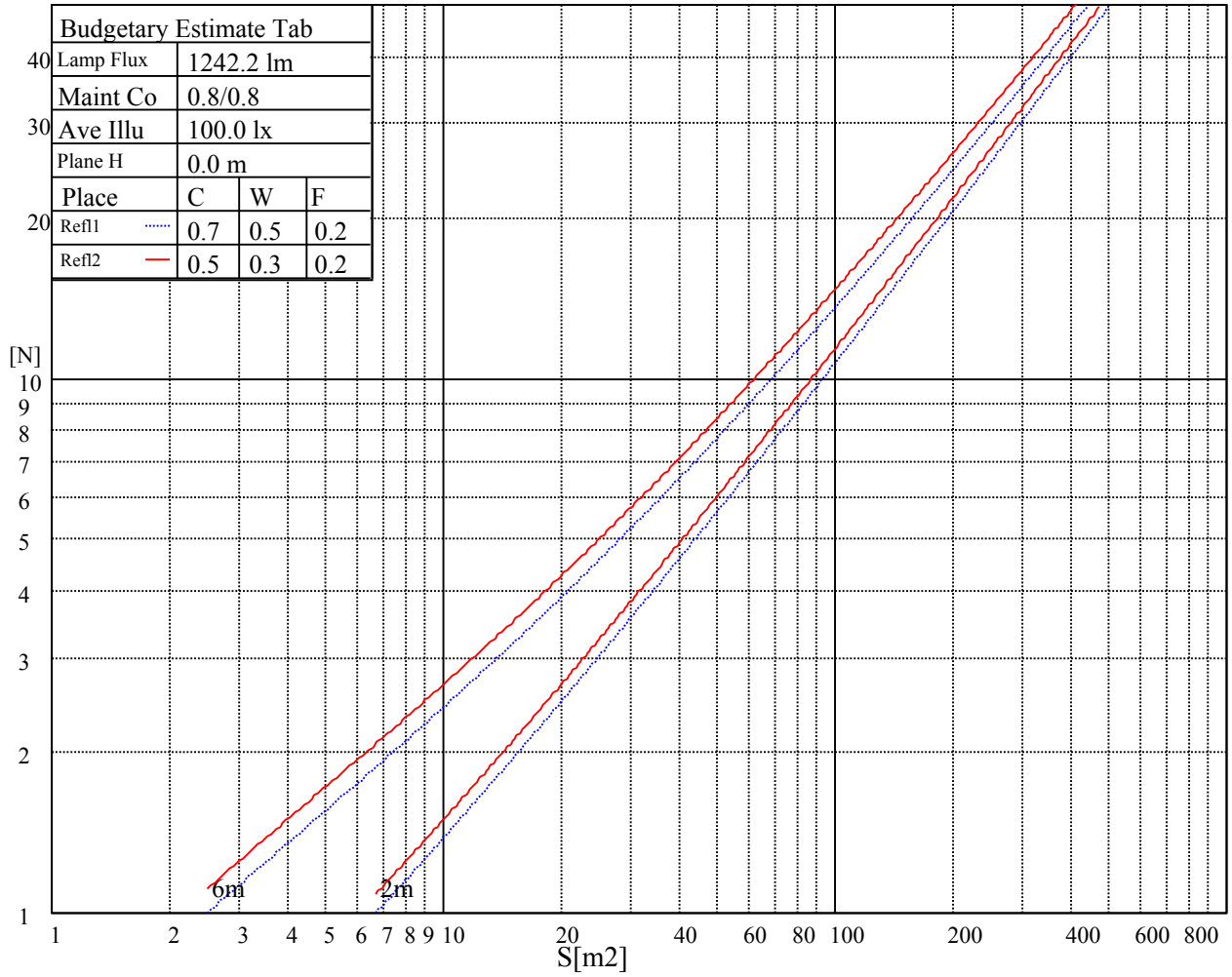


| Illumination assessment according UGR | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Rf of Ceiling | | 70 | 70 | 50 | 50 | 30 | 70 | 70 | 50 | 50 | 30 |
| Rf of Wall | | 50 | 30 | 50 | 30 | 30 | 50 | 30 | 50 | 30 | 30 |
| Rf of Floor | | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Room dimensions | | Viewed crosswise | | | | | Viewed endwise | | | | |
| X | Y | | | | | | | | | | |
| 2H | 2H | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 |
| | 3H | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 |
| | 4H | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 |
| | 6H | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 |
| | 8H | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 |
| | 12H | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 |
| 4H | 2H | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 |
| | 3H | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 |
| | 4H | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 |
| | 6H | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 |
| | 8H | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 |
| | 12H | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 |
| 8H | 4H | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 |
| | 6H | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 |
| | 8H | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 |
| | 12H | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 |
| 12H | 4H | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 |
| | 6H | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 |
| | 8H | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 | 非数字 |
| Variation with the observer position at spacings: | | | | | | | | | | | |
| S = 1.0H | | 非数字/非数字 | | | | | 非数字/非数字 | | | | |
| S = 1.5H | | 非数字/非数字 | | | | | 非数字/非数字 | | | | |
| S = 2.0H | | 非数字/非数字 | | | | | 非数字/非数字 | | | | |
| Standard tables: | | BK0 | | | | | BK0 | | | | |
| Uncorrected UGR | | 负无穷大 | | | | | 负无穷大 | | | | |

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

## Budgetary Estimate Table






Equipment: GMS1980 Date: 2023/12/04 Operator: NT07
Temperature(°C): 0.0 Humidity(%): 0.0% Distance(m): 7.44

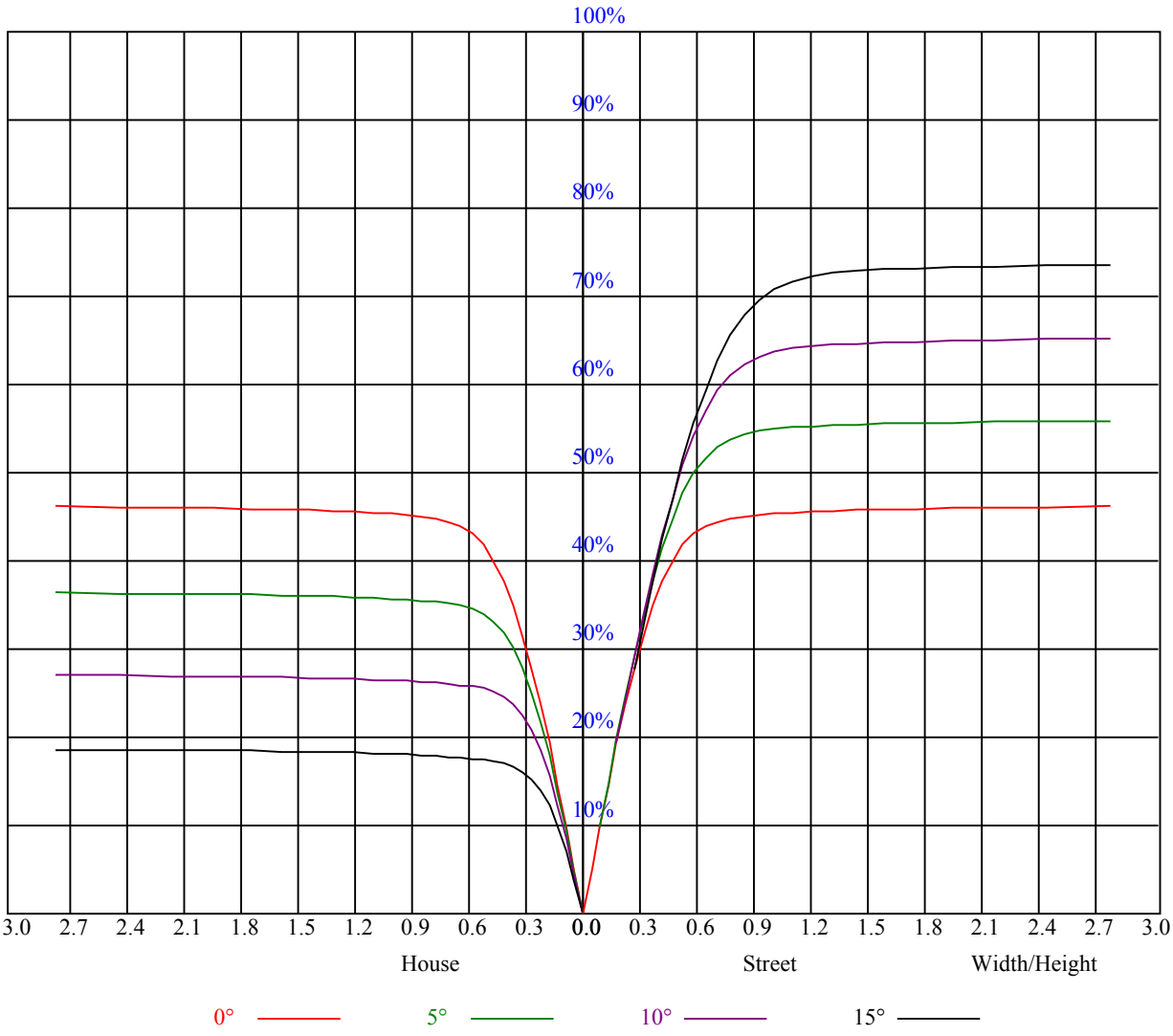
# Utilization factor table for indoor luminaire



| 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 | 1.11 | 1.11 | 1.11 | 1.08 | 1.08 | 1.08 | 1.03 | 1.03 | 1.03 | 0.99 | 0.99 | 0.99 | 0.95 | 0.95 | 0.95 | 0.93 |
| 1 | 1.03 | 1.01 | 0.99 | 1.01 | 0.99 | 0.97 | 0.97 | 0.96 | 0.94 | 0.94 | 0.93 | 0.91 | 0.91 | 0.90 | 0.89 | 0.87 |
| 2 | 0.96 | 0.93 | 0.90 | 0.95 | 0.92 | 0.89 | 0.92 | 0.89 | 0.87 | 0.89 | 0.87 | 0.85 | 0.87 | 0.85 | 0.83 | 0.82 |
| 3 | 0.91 | 0.86 | 0.83 | 0.89 | 0.85 | 0.82 | 0.87 | 0.84 | 0.81 | 0.85 | 0.82 | 0.79 | 0.83 | 0.80 | 0.78 | 0.77 |
| 4 | 0.85 | 0.81 | 0.77 | 0.84 | 0.80 | 0.76 | 0.82 | 0.79 | 0.75 | 0.80 | 0.77 | 0.75 | 0.79 | 0.76 | 0.74 | 0.72 |
| 5 | 0.81 | 0.76 | 0.72 | 0.80 | 0.75 | 0.71 | 0.78 | 0.74 | 0.71 | 0.77 | 0.73 | 0.70 | 0.75 | 0.72 | 0.70 | 0.68 |
| 6 | 0.76 | 0.71 | 0.67 | 0.76 | 0.71 | 0.67 | 0.74 | 0.70 | 0.67 | 0.73 | 0.69 | 0.66 | 0.72 | 0.68 | 0.66 | 0.65 |
| 7 | 0.72 | 0.67 | 0.64 | 0.72 | 0.67 | 0.63 | 0.71 | 0.66 | 0.63 | 0.70 | 0.66 | 0.63 | 0.69 | 0.65 | 0.62 | 0.61 |
| 8 | 0.69 | 0.64 | 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 | 0.60 | 0.57 | 0.65 | 0.60 | 0.57 | 0.64 | 0.60 | 0.57 | 0.63 | 0.59 | 0.56 | 0.63 | 0.59 | 0.56 | 0.55 |
| 10 | 0.62 | 0.57 | 0.54 | 0.62 | 0.57 | 0.54 | 0.61 | 0.57 | 0.54 | 0.61 | 0.57 | 0.54 | 0.60 | 0.56 | 0.54 | 0.52 |

## Coefficient Utilization Curve






| | | |
|---|---|---|
| Equipment: GMS1980 | Date: 2023/12/04 | Operator: NT07 |
| Temperature(°C): 0.0 | Humidity(%): 0.0% | Distance(m): 7.44 |

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 | 1696.03 | 1682.20 | 1679.98 | 1674.45 | 1660.61 | 1647.88 | 1632.38 | 1619.09 | 1603.59 |
| 45.0 | 1704.89 | 1704.34 | 1688.84 | 1675.00 | 1677.77 | 1675.55 | 1657.29 | 1647.88 | 1622.97 |
| 90.0 | 1704.89 | 1673.89 | 1666.14 | 1671.68 | 1668.36 | 1650.64 | 1643.45 | 1637.36 | 1624.63 |
| 135.0 | 1696.03 | 1689.39 | 1668.91 | 1659.50 | 1661.72 | 1658.39 | 1647.88 | 1639.57 | 1623.52 |
| 180.0 | 1696.03 | 1705.44 | 1691.61 | 1673.89 | 1662.27 | 1659.50 | 1647.88 | 1633.48 | 1610.79 |
| 225.0 | 1704.89 | 1678.87 | 1664.48 | 1660.05 | 1653.41 | 1641.23 | 1622.97 | 1598.61 | 1576.47 |
| 270.0 | 1704.89 | 1705.44 | 1683.30 | 1667.25 | 1668.91 | 1664.48 | 1646.77 | 1632.38 | 1614.11 |
| 315.0 | 1696.03 | 1684.41 | 1670.02 | 1669.46 | 1661.16 | 1648.43 | 1635.70 | 1617.99 | 1596.95 |
| 360.0 | 1696.03 | 1682.20 | 1679.98 | 1674.45 | 1660.61 | 1647.88 | 1632.38 | 1619.09 | 1603.59 |

| C/γ(°) | 9.0 | 10.0 | 11.0 | 12.0 | 13.0 | 14.0 | 15.0 | 16.0 | 17.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 1577.02 | 1562.08 | 1547.13 | 1528.87 | 1496.21 | 1472.41 | 1438.64 | 1408.20 | 1373.88 |
| 45.0 | 1601.93 | 1587.54 | 1564.29 | 1547.69 | 1528.31 | 1512.81 | 1492.33 | 1470.75 | 1441.41 |
| 90.0 | 1599.72 | 1575.92 | 1557.65 | 1539.94 | 1519.46 | 1493.44 | 1469.64 | 1443.07 | 1412.07 |
| 135.0 | 1610.79 | 1589.20 | 1568.17 | 1544.37 | 1528.31 | 1507.83 | 1471.85 | 1437.53 | 1404.32 |
| 180.0 | 1595.84 | 1577.02 | 1556.54 | 1536.06 | 1517.80 | 1507.28 | 1483.48 | 1450.26 | 1423.14 |
| 225.0 | 1551.01 | 1528.31 | 1508.94 | 1495.65 | 1478.49 | 1454.14 | 1435.32 | 1410.96 | 1389.38 |
| 270.0 | 1585.33 | 1561.53 | 1537.72 | 1510.05 | 1487.35 | 1473.51 | 1457.46 | 1438.09 | 1405.98 |
| 315.0 | 1573.70 | 1553.78 | 1538.28 | 1521.12 | 1495.65 | 1477.94 | 1455.80 | 1419.27 | 1391.04 |
| 360.0 | 1577.02 | 1562.08 | 1547.13 | 1528.87 | 1496.21 | 1472.41 | 1438.64 | 1408.20 | 1373.88 |

| C/γ(°) | 18.0 | 19.0 | 20.0 | 21.0 | 22.0 | 23.0 | 24.0 | 25.0 | 26.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 1320.74 | 1274.24 | 1094.17 | 1094.17 | 1058.31 | 980.98 | 900.44 | 818.57 | 708.47 |
| 45.0 | 1413.73 | 1381.63 | 1340.11 | 1279.78 | 1222.21 | 1155.78 | 1071.09 | 995.81 | 918.87 |
| 90.0 | 1374.98 | 1325.72 | 1276.45 | 1104.36 | 1104.36 | 1069.60 | 994.21 | 914.66 | 805.51 |
| 135.0 | 1362.81 | 1326.27 | 1277.56 | 1228.30 | 1174.05 | 1110.39 | 1016.29 | 936.03 | 850.78 |
| 180.0 | 1386.61 | 1353.40 | 1315.20 | 1262.62 | 1211.14 | 1150.25 | 1091.02 | 999.69 | 917.21 |
| 225.0 | 1347.31 | 1303.02 | 1238.81 | 1102.03 | 1102.03 | 1036.44 | 965.09 | 888.76 | 782.70 |
| 270.0 | 1377.75 | 1343.99 | 1286.97 | 1234.94 | 1165.19 | 1107.63 | 1046.74 | 957.06 | 877.35 |
| 315.0 | 1347.86 | 1301.36 | 1250.99 | 1095.06 | 1095.06 | 1041.31 | 969.74 | 892.19 | 790.89 |
| 360.0 | 1320.74 | 1274.24 | 1094.17 | 1094.17 | 1058.31 | 980.98 | 900.44 | 818.57 | 708.47 |

| C/γ(°) | 27.0 | 28.0 | 29.0 | 30.0 | 31.0 | 32.0 | 33.0 | 34.0 | 35.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 617.19 | 531.78 | 453.24 | 366.39 | 306.88 | 255.35 | 201.65 | 165.56 | 129.42 |
| 45.0 | 812.59 | 720.70 | 629.37 | 525.86 | 450.02 | 381.39 | 306.11 | 279.54 | 279.54 |
| 90.0 | 715.45 | 603.46 | 522.43 | 445.65 | 361.46 | 301.95 | 251.08 | 195.73 | 157.48 |
| 135.0 | 763.88 | 675.87 | 566.82 | 488.22 | 395.78 | 331.01 | 288.39 | 288.39 | 179.29 |
| 180.0 | 831.96 | 745.06 | 637.12 | 553.54 | 473.27 | 383.05 | 320.50 | 280.09 | 280.09 |
| 225.0 | 695.91 | 607.78 | 525.64 | 429.49 | 360.74 | 300.57 | 250.03 | 194.29 | 158.20 |
| 270.0 | 790.45 | 699.12 | 588.96 | 508.70 | 433.42 | 365.33 | 304.44 | 290.61 | 228.61 |
| 315.0 | 703.60 | 615.31 | 528.24 | 432.70 | 364.23 | 304.56 | 241.56 | 199.38 | 163.51 |
| 360.0 | 617.19 | 531.78 | 453.24 | 366.39 | 306.88 | 255.35 | 201.65 | 165.56 | 129.42 |

| C/γ(°) | 36.0 | 37.0 | 38.0 | 39.0 | 40.0 | 41.0 | 42.0 | 43.0 | 44.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 106.67 | 88.23 | 73.62 | 59.23 | 50.48 | 43.34 | 37.53 | 31.88 | 28.45 |
| 45.0 | 166.89 | 128.48 | 104.18 | 85.02 | 70.08 | 56.18 | 48.05 | 41.74 | 35.70 |
| 90.0 | 126.59 | 103.07 | 84.64 | 67.03 | 56.52 | 48.49 | 40.96 | 36.26 | 32.44 |
| 135.0 | 148.29 | 116.46 | 97.15 | 81.04 | 68.14 | 55.80 | 47.99 | 41.74 | 36.64 |
| 180.0 | 173.64 | 142.92 | 112.04 | 92.66 | 77.33 | 64.71 | 52.42 | 44.78 | 38.69 |
| 225.0 | 127.76 | 98.53 | 80.98 | 67.48 | 54.58 | 46.61 | 40.52 | 34.65 | 30.89 |
| 270.0 | 156.82 | 120.67 | 98.75 | 78.60 | 66.20 | 56.41 | 46.88 | 41.13 | 36.48 |
| 315.0 | 126.70 | 104.29 | 87.07 | 70.08 | 59.51 | 50.87 | 44.06 | 37.14 | 32.66 |
| 360.0 | 106.67 | 88.23 | 73.62 | 59.23 | 50.48 | 43.34 | 37.53 | 31.88 | 28.45 |

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 | 25.68 | 23.53 | 21.26 | 19.76 | 18.21 | 17.16 | 16.27 | 15.28 | 14.61 |
| 45.0 | 31.83 | 28.78 | 25.52 | 23.41 | 21.53 | 19.65 | 18.38 | 17.33 | 16.44 |
| 90.0 | 28.51 | 25.96 | 23.30 | 21.53 | 19.98 | 18.65 | 17.33 | 16.44 | 15.67 |
| 135.0 | 32.55 | 28.62 | 26.07 | 23.41 | 21.59 | 20.09 | 18.49 | 17.44 | 16.50 |
| 180.0 | 34.04 | 29.45 | 26.68 | 24.36 | 22.09 | 20.43 | 19.10 | 17.60 | 16.61 |
| 225.0 | 27.73 | 25.24 | 22.69 | 20.98 | 19.54 | 18.27 | 16.94 | 16.05 | 15.22 |
| 270.0 | 32.66 | 28.84 | 26.24 | 24.08 | 22.25 | 20.26 | 18.99 | 17.82 | 16.61 |
| 315.0 | 29.23 | 26.35 | 23.58 | 21.70 | 20.15 | 18.49 | 17.38 | 16.22 | 15.39 |
| 360.0 | 25.68 | 23.53 | 21.26 | 19.76 | 18.21 | 17.16 | 16.27 | 15.28 | 14.61 |

| C/γ(°) | 54.0 | 55.0 | 56.0 | 57.0 | 58.0 | 59.0 | 60.0 | 61.0 | 62.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 14.00 | 13.34 | 12.90 | 12.40 | 12.01 | 11.57 | 11.24 | 10.90 | 10.63 |
| 45.0 | 15.44 | 14.72 | 14.06 | 13.51 | 12.90 | 12.40 | 11.96 | 11.46 | 11.07 |
| 90.0 | 14.89 | 14.12 | 13.56 | 13.06 | 12.57 | 12.01 | 11.68 | 11.18 | 10.90 |
| 135.0 | 15.44 | 14.72 | 14.12 | 13.51 | 12.90 | 12.45 | 12.01 | 11.62 | 11.18 |
| 180.0 | 15.55 | 14.78 | 14.17 | 13.56 | 12.95 | 12.51 | 12.07 | 11.68 | 11.35 |
| 225.0 | 14.39 | 13.78 | 13.12 | 12.62 | 12.23 | 11.79 | 11.35 | 11.02 | 10.68 |
| 270.0 | 15.78 | 15.00 | 14.17 | 13.62 | 13.01 | 12.51 | 12.07 | 11.68 | 11.35 |
| 315.0 | 14.67 | 14.06 | 13.34 | 12.84 | 12.45 | 12.01 | 11.51 | 11.24 | 10.85 |
| 360.0 | 14.00 | 13.34 | 12.90 | 12.40 | 12.01 | 11.57 | 11.24 | 10.90 | 10.63 |

| C/γ(°) | 63.0 | 64.0 | 65.0 | 66.0 | 67.0 | 68.0 | 69.0 | 70.0 | 71.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 10.24 | 10.02 | 9.69 | 9.47 | 9.24 | 8.91 | 8.69 | 8.52 | 8.30 |
| 45.0 | 10.74 | 10.46 | 10.13 | 9.85 | 9.58 | 9.35 | 9.08 | 8.80 | 8.58 |
| 90.0 | 10.57 | 10.24 | 9.91 | 9.69 | 9.35 | 9.13 | 8.91 | 8.69 | 8.47 |
| 135.0 | 10.85 | 10.57 | 10.19 | 9.91 | 9.63 | 9.35 | 9.13 | 8.86 | 8.64 |
| 180.0 | 10.90 | 10.57 | 10.24 | 9.91 | 9.69 | 9.41 | 9.13 | 8.97 | 8.64 |
| 225.0 | 10.35 | 10.02 | 9.74 | 9.47 | 9.24 | 8.97 | 8.75 | 8.47 | 8.25 |
| 270.0 | 10.90 | 10.57 | 10.30 | 9.96 | 9.69 | 9.47 | 9.19 | 8.86 | 8.64 |
| 315.0 | 10.52 | 10.19 | 9.96 | 9.63 | 9.41 | 9.13 | 8.86 | 8.69 | 8.41 |
| 360.0 | 10.24 | 10.02 | 9.69 | 9.47 | 9.24 | 8.91 | 8.69 | 8.52 | 8.30 |

| C/γ(°) | 72.0 | 73.0 | 74.0 | 75.0 | 76.0 | 77.0 | 78.0 | 79.0 | 80.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 7.97 | 7.75 | 7.58 | 7.36 | 7.09 | 6.92 | 6.70 | 6.42 | 6.25 |
| 45.0 | 8.36 | 8.14 | 7.86 | 7.64 | 7.47 | 7.25 | 7.03 | 6.81 | 6.59 |
| 90.0 | 8.19 | 7.92 | 7.75 | 7.47 | 7.25 | 7.09 | 6.81 | 6.64 | 6.37 |
| 135.0 | 8.36 | 8.14 | 7.86 | 7.69 | 7.47 | 7.25 | 7.03 | 6.81 | 6.59 |
| 180.0 | 8.41 | 8.19 | 7.97 | 7.69 | 7.47 | 7.31 | 7.09 | 6.81 | 6.64 |
| 225.0 | 8.08 | 7.80 | 7.58 | 7.36 | 7.09 | 6.86 | 6.70 | 6.53 | 6.25 |
| 270.0 | 8.36 | 8.14 | 7.92 | 7.64 | 7.47 | 7.25 | 7.03 | 6.81 | 6.53 |
| 315.0 | 8.19 | 7.92 | 7.69 | 7.53 | 7.25 | 7.09 | 6.86 | 6.70 | 6.42 |
| 360.0 | 7.97 | 7.75 | 7.58 | 7.36 | 7.09 | 6.92 | 6.70 | 6.42 | 6.25 |

| C/γ(°) | 81.0 | 82.0 | 83.0 | 84.0 | 85.0 | 86.0 | 87.0 | 88.0 | 89.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 6.09 | 5.87 | 5.70 | 5.54 | 5.42 | 5.26 | 5.15 | 4.98 | 4.87 |
| 45.0 | 6.37 | 6.14 | 5.98 | 5.81 | 5.65 | 5.48 | 5.31 | 5.20 | 5.04 |
| 90.0 | 6.20 | 6.03 | 5.87 | 5.70 | 5.54 | 5.37 | 5.26 | 5.15 | 4.98 |
| 135.0 | 6.37 | 6.20 | 5.98 | 5.76 | 5.65 | 5.48 | 5.37 | 5.20 | 5.04 |
| 180.0 | 6.42 | 6.20 | 5.98 | 5.87 | 5.65 | 5.48 | 5.37 | 5.20 | 5.04 |
| 225.0 | 6.14 | 5.92 | 5.76 | 5.59 | 5.42 | 5.31 | 5.20 | 5.04 | 4.93 |
| 270.0 | 6.37 | 6.14 | 5.98 | 5.81 | 5.65 | 5.48 | 5.31 | 5.20 | 5.04 |
| 315.0 | 6.25 | 6.09 | 5.92 | 5.76 | 5.54 | 5.42 | 5.31 | 5.20 | 5.04 |
| 360.0 | 6.09 | 5.87 | 5.70 | 5.54 | 5.42 | 5.26 | 5.15 | 4.98 | 4.87 |

Intensity data(cd)



| C/γ(°) | 90.0 |
|---|---|
| 0.0 | 4.93 |
| 45.0 | 4.98 |
| 90.0 | 5.04 |
| 135.0 | 4.98 |
| 180.0 | 4.87 |
| 225.0 | 4.93 |
| 270.0 | 4.98 |
| 315.0 | 4.98 |
| 360.0 | 4.93 |