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## NATA

Client:
LumCAT: 2-2641-L
Luminaire: 92.70.411.00
Report No: 2023718-B005
Ballast type: AC

| | |
|---|---|
| Test No: 2023718-C005 | Voltage(V): 34.750 |
| LampCAT: SLM C 1208 L15 2024 G7 HE+ | Current(A): 0.500 |
| Lamp flux(lm): 3273.2 | Power (W): 20.155 |
| Number of Lamps: 1 | PF: 0.000 |
| Length(mm): 0 | Width(mm): 0 |
| Phm Type: C | Height(mm): 0 |

## Photometric Results

Lumens(lm): 3016.94, Efficiency(%): 92.17% , Luminous Efficacy(lm/W): 149.69
Central intensity(cd): 6580.104, Maximum intensity(cd): 6580.104
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=37.4
[C90/270]Total=37.4
Field angle(10%Imax): [C0/180]Total=65.4
[C90/270]Total=65.4
Maximum s/h(1/2): C0_180=0.61 C90_270=0.61
Maximum s/h(1/4): C0_180=0.62 C90_270=0.62
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 92.17%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.993%

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 0.0 | 6580.104 | 0.000 | 0 | 0.00% | 0.00% |
| 1.0 | 6568.687 | 6.291 | 6.291 | 0.19% | 0.21% |
| 2.0 | 6523.851 | 18.792 | 25.083 | 0.57% | 0.83% |
| 3.0 | 6460.886 | 31.055 | 56.138 | 0.95% | 1.86% |
| 4.0 | 6371.490 | 42.954 | 99.092 | 1.31% | 3.28% |
| 5.0 | 6260.852 | 54.344 | 153.436 | 1.66% | 5.09% |
| 6.0 | 6127.173 | 65.102 | 218.538 | 1.99% | 7.24% |
| 7.0 | 5971.975 | 75.099 | 293.638 | 2.29% | 9.73% |
| 8.0 | 5796.089 | 84.222 | 377.859 | 2.57% | 12.52% |
| 9.0 | 5605.189 | 92.401 | 470.261 | 2.82% | 15.59% |
| 10.0 | 5399.688 | 99.590 | 569.851 | 3.04% | 18.89% |
| 11.0 | 5178.758 | 105.700 | 675.551 | 3.23% | 22.39% |
| 12.0 | 4949.248 | 110.714 | 786.265 | 3.38% | 26.06% |
| 13.0 | 4716.487 | 114.708 | 900.973 | 3.50% | 29.86% |
| 14.0 | 4481.026 | 117.727 | 1018.7 | 3.60% | 33.77% |
| 15.0 | 4232.904 | 119.629 | 1138.329 | 3.65% | 37.73% |
| 16.0 | 3970.251 | 120.199 | 1258.528 | 3.67% | 41.72% |
| 17.0 | 3731.192 | 119.932 | 1378.46 | 3.66% | 45.69% |
| 18.0 | 3470.685 | 118.743 | 1497.203 | 3.63% | 49.63% |
| 19.0 | 3203.188 | 116.112 | 1613.315 | 3.55% | 53.48% |
| 20.0 | 2948.008 | 112.584 | 1725.899 | 3.44% | 57.21% |
| 21.0 | 2698.709 | 108.428 | 1834.327 | 3.31% | 60.80% |
| 22.0 | 2473.143 | 103.931 | 1938.258 | 3.18% | 64.25% |
| 23.0 | 2245.640 | 99.013 | 2037.271 | 3.02% | 67.53% |
| 24.0 | 2058.960 | 94.114 | 2131.385 | 2.88% | 70.65% |
| 25.0 | 1867.575 | 89.281 | 2220.666 | 2.73% | 73.61% |
| 26.0 | 1695.841 | 84.115 | 2304.781 | 2.57% | 76.39% |
| 27.0 | 1467.888 | 77.401 | 2382.182 | 2.36% | 78.96% |
| 28.0 | 1283.380 | 69.656 | 2451.838 | 2.13% | 81.27% |
| 29.0 | 1139.122 | 63.379 | 2515.218 | 1.94% | 83.37% |
| 30.0 | 1018.050 | 58.243 | 2573.461 | 1.78% | 85.30% |
| 31.0 | 875.895 | 52.706 | 2626.167 | 1.61% | 87.05% |
| 32.0 | 741.738 | 46.343 | 2672.51 | 1.42% | 88.58% |
| 33.0 | 621.337 | 40.157 | 2712.667 | 1.23% | 89.91% |
| 34.0 | 517.957 | 34.478 | 2747.145 | 1.05% | 91.06% |
| 35.0 | 414.875 | 28.970 | 2776.115 | 0.89% | 92.02% |
| 36.0 | 331.720 | 23.772 | 2799.887 | 0.73% | 92.81% |
| 37.0 | 268.237 | 19.567 | 2819.454 | 0.60% | 93.45% |

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 38.0 | 217.055 | 16.198 | 2835.653 | 0.49% | 93.99% |
| 39.0 | 173.845 | 13.342 | 2848.995 | 0.41% | 94.43% |
| 40.0 | 122.712 | 10.343 | 2859.338 | 0.32% | 94.78% |
| 41.0 | 107.199 | 8.187 | 2867.525 | 0.25% | 95.05% |
| 42.0 | 97.007 | 7.419 | 2874.944 | 0.23% | 95.29% |
| 43.0 | 89.105 | 6.894 | 2881.838 | 0.21% | 95.52% |
| 44.0 | 82.193 | 6.465 | 2888.304 | 0.20% | 95.74% |
| 45.0 | 76.180 | 6.086 | 2894.39 | 0.19% | 95.94% |
| 46.0 | 70.804 | 5.748 | 2900.138 | 0.18% | 96.13% |
| 47.0 | 65.843 | 5.435 | 2905.573 | 0.17% | 96.31% |
| 48.0 | 61.429 | 5.145 | 2910.718 | 0.16% | 96.48% |
| 49.0 | 57.000 | 4.863 | 2915.582 | 0.15% | 96.64% |
| 50.0 | 53.575 | 4.610 | 2920.192 | 0.14% | 96.79% |
| 51.0 | 50.123 | 4.387 | 2924.579 | 0.13% | 96.94% |
| 52.0 | 47.037 | 4.169 | 2928.748 | 0.13% | 97.08% |
| 53.0 | 44.207 | 3.969 | 2932.717 | 0.12% | 97.21% |
| 54.0 | 41.778 | 3.790 | 2936.507 | 0.12% | 97.33% |
| 55.0 | 39.647 | 3.635 | 2940.142 | 0.11% | 97.45% |
| 56.0 | 37.578 | 3.490 | 2943.631 | 0.11% | 97.57% |
| 57.0 | 35.869 | 3.358 | 2946.99 | 0.10% | 97.68% |
| 58.0 | 34.215 | 3.241 | 2950.231 | 0.10% | 97.79% |
| 59.0 | 32.804 | 3.133 | 2953.364 | 0.10% | 97.89% |
| 60.0 | 31.406 | 3.034 | 2956.397 | 0.09% | 97.99% |
| 61.0 | 30.188 | 2.939 | 2959.337 | 0.09% | 98.09% |
| 62.0 | 29.026 | 2.853 | 2962.19 | 0.09% | 98.19% |
| 63.0 | 27.954 | 2.771 | 2964.961 | 0.08% | 98.28% |
| 64.0 | 26.971 | 2.695 | 2967.656 | 0.08% | 98.37% |
| 65.0 | 26.044 | 2.624 | 2970.28 | 0.08% | 98.45% |
| 66.0 | 25.110 | 2.552 | 2972.832 | 0.08% | 98.54% |
| 67.0 | 24.293 | 2.484 | 2975.316 | 0.08% | 98.62% |
| 68.0 | 23.449 | 2.418 | 2977.735 | 0.07% | 98.70% |
| 69.0 | 22.695 | 2.354 | 2980.089 | 0.07% | 98.78% |
| 70.0 | 21.892 | 2.290 | 2982.379 | 0.07% | 98.85% |
| 71.0 | 21.187 | 2.227 | 2984.605 | 0.07% | 98.93% |
| 72.0 | 20.495 | 2.167 | 2986.773 | 0.07% | 99.00% |
| 73.0 | 19.830 | 2.109 | 2988.881 | 0.06% | 99.07% |
| 74.0 | 19.159 | 2.050 | 2990.931 | 0.06% | 99.14% |
| 75.0 | 18.543 | 1.992 | 2992.923 | 0.06% | 99.20% |

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 76.0 | 17.935 | 1.936 | 2994.86 | 0.06% | 99.27% |
| 77.0 | 17.319 | 1.880 | 2996.739 | 0.06% | 99.33% |
| 78.0 | 16.751 | 1.824 | 2998.563 | 0.06% | 99.39% |
| 79.0 | 16.205 | 1.771 | 3000.334 | 0.05% | 99.45% |
| 80.0 | 15.714 | 1.721 | 3002.055 | 0.05% | 99.51% |
| 81.0 | 15.174 | 1.670 | 3003.725 | 0.05% | 99.56% |
| 82.0 | 14.669 | 1.618 | 3005.343 | 0.05% | 99.62% |
| 83.0 | 14.198 | 1.569 | 3006.912 | 0.05% | 99.67% |
| 84.0 | 13.811 | 1.526 | 3008.438 | 0.05% | 99.72% |
| 85.0 | 13.458 | 1.488 | 3009.927 | 0.05% | 99.77% |
| 86.0 | 13.160 | 1.455 | 3011.382 | 0.04% | 99.82% |
| 87.0 | 12.877 | 1.425 | 3012.807 | 0.04% | 99.86% |
| 88.0 | 12.634 | 1.397 | 3014.204 | 0.04% | 99.91% |
| 89.0 | 12.448 | 1.375 | 3015.579 | 0.04% | 99.95% |
| 90.0 | 12.365 | 1.360 | 3016.939 | 0.04% | 100.00% |

## Zonal flux distribution table



ZONAL LUMEN SUMMARY

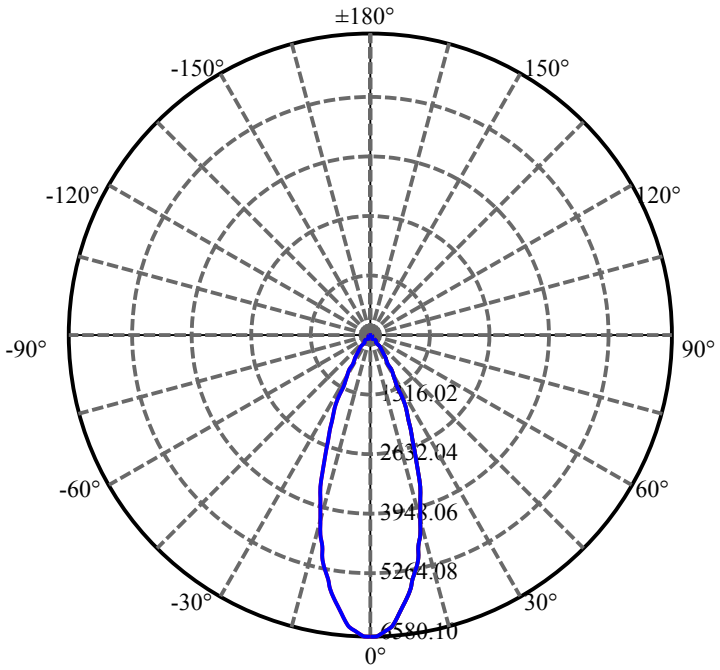
| Zone | Lumens | %Lamp | %Fixt |
|---|---|---|---|
| 0-30 | 2573.46 | 78.62% | 85.30% |
| 0-40 | 2859.34 | 87.35% | 94.78% |
| 0-60 | 2956.40 | 90.32% | 97.99% |
| 0-90 | 3015.58 | 92.13% | 99.95% |
| 0-120 | 3015.58 | 92.13% | 99.95% |
| 0-180 | 3016.94 | 92.17% | 100.00% |
| 60-90 | 59.18 | 1.81% | 1.96% |
| 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% |
| 0-27.45 | 2413.55 | 73.74% | 80.00% |

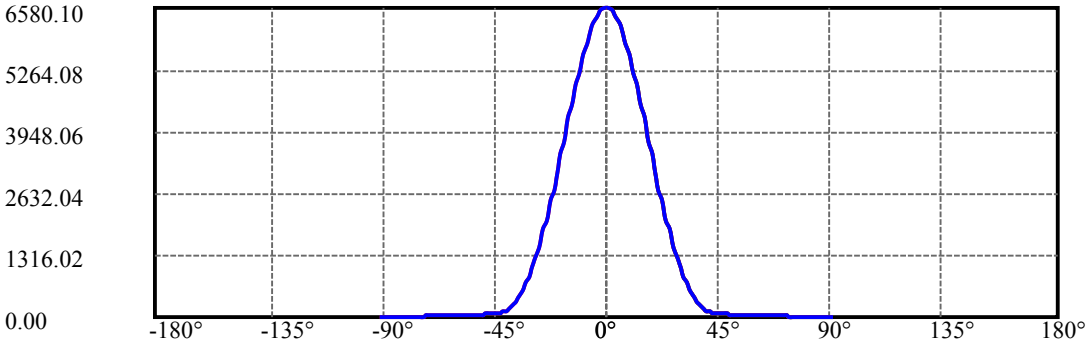
ZONAL LUMEN SUMMARY

| | |
|---|---|
| 0-10 | 569.85 |
| 10-20 | 1156.05 |
| 20-30 | 847.56 |
| 30-40 | 285.88 |
| 40-50 | 60.85 |
| 50-60 | 36.21 |
| 60-70 | 25.98 |
| 70-80 | 19.68 |
| 80-90 | 13.52 |
| 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:

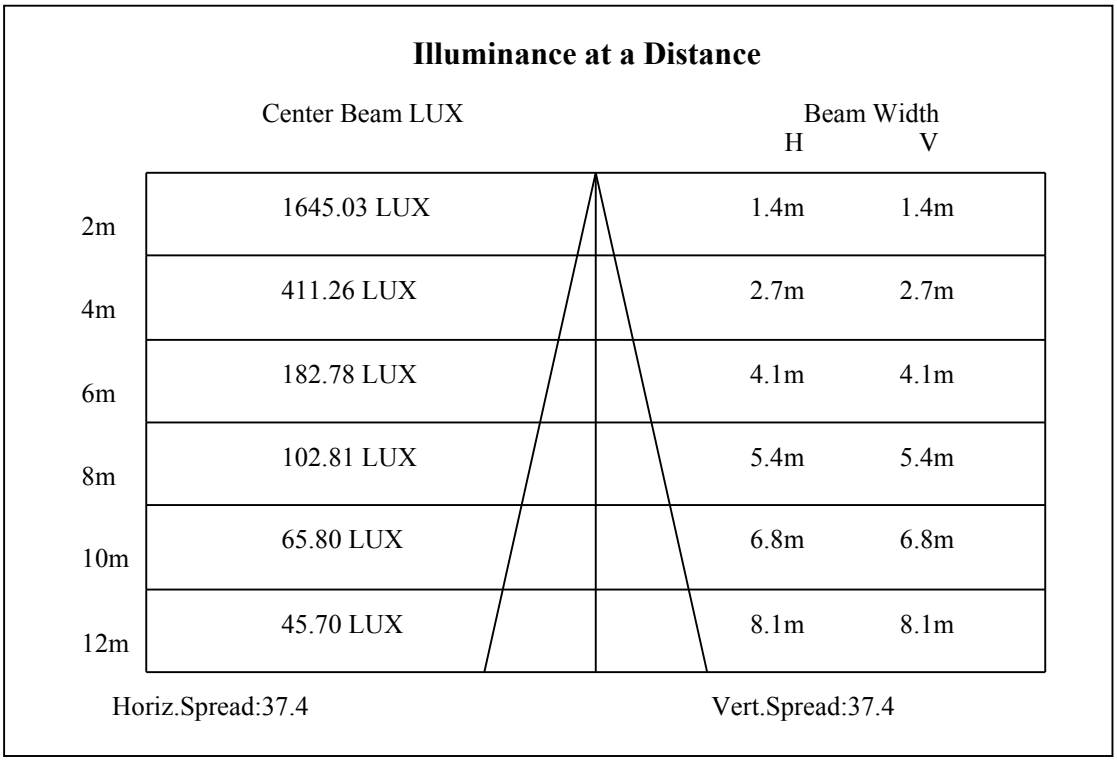
C90/C270:

Field angle(10%Imax):C0/180Left:32.7 Right:32.7
:C90/270Left:32.7 Right:32.7

Beam Angle(50%Imax):C0/180Left:18.7 Right:18.7
:C90/270Left:18.7 Right:18.7

Lux distance Curve

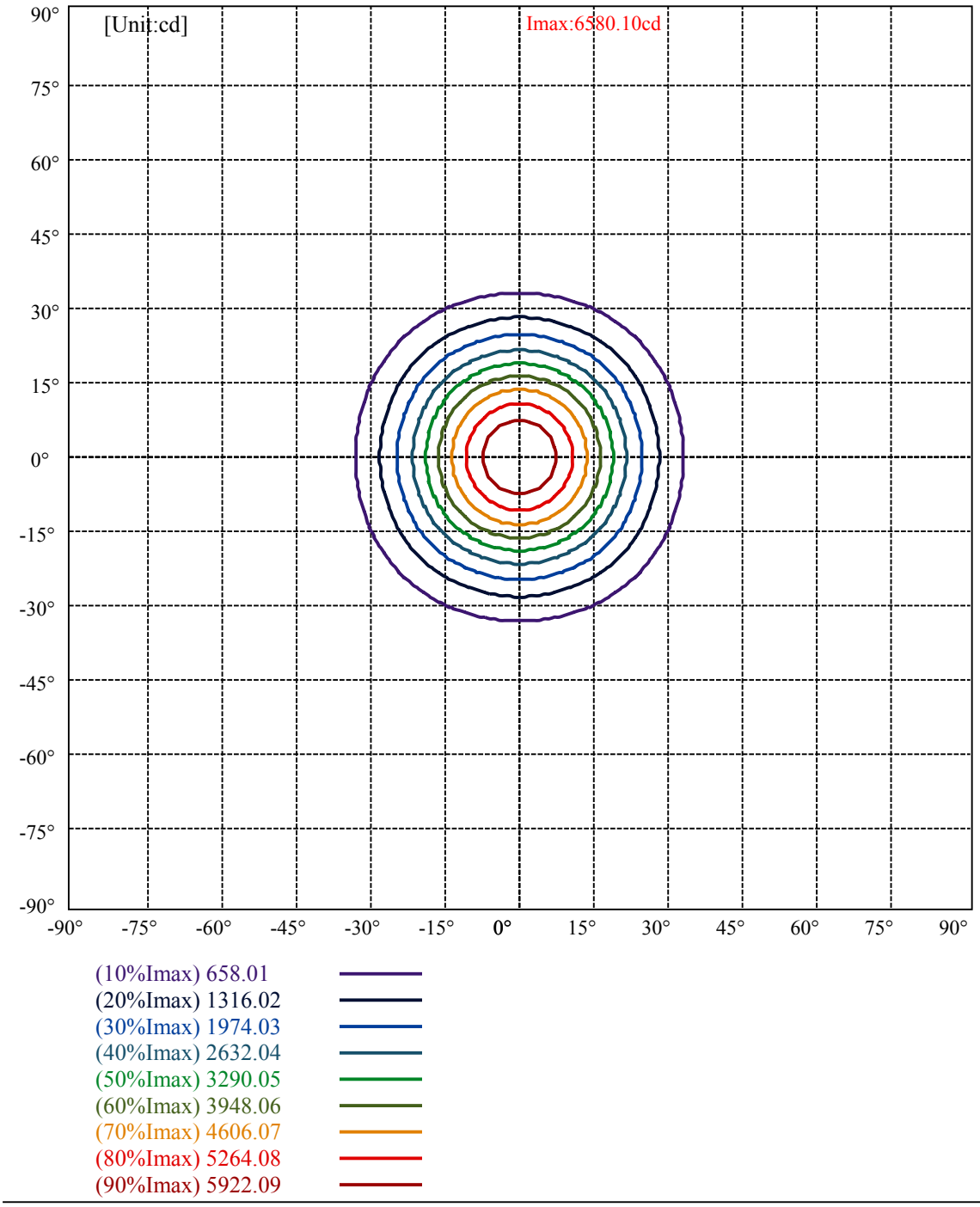





Equipment: GMS1980 Date: 2023/7/18 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.44

ISO-Intensity(V-H)





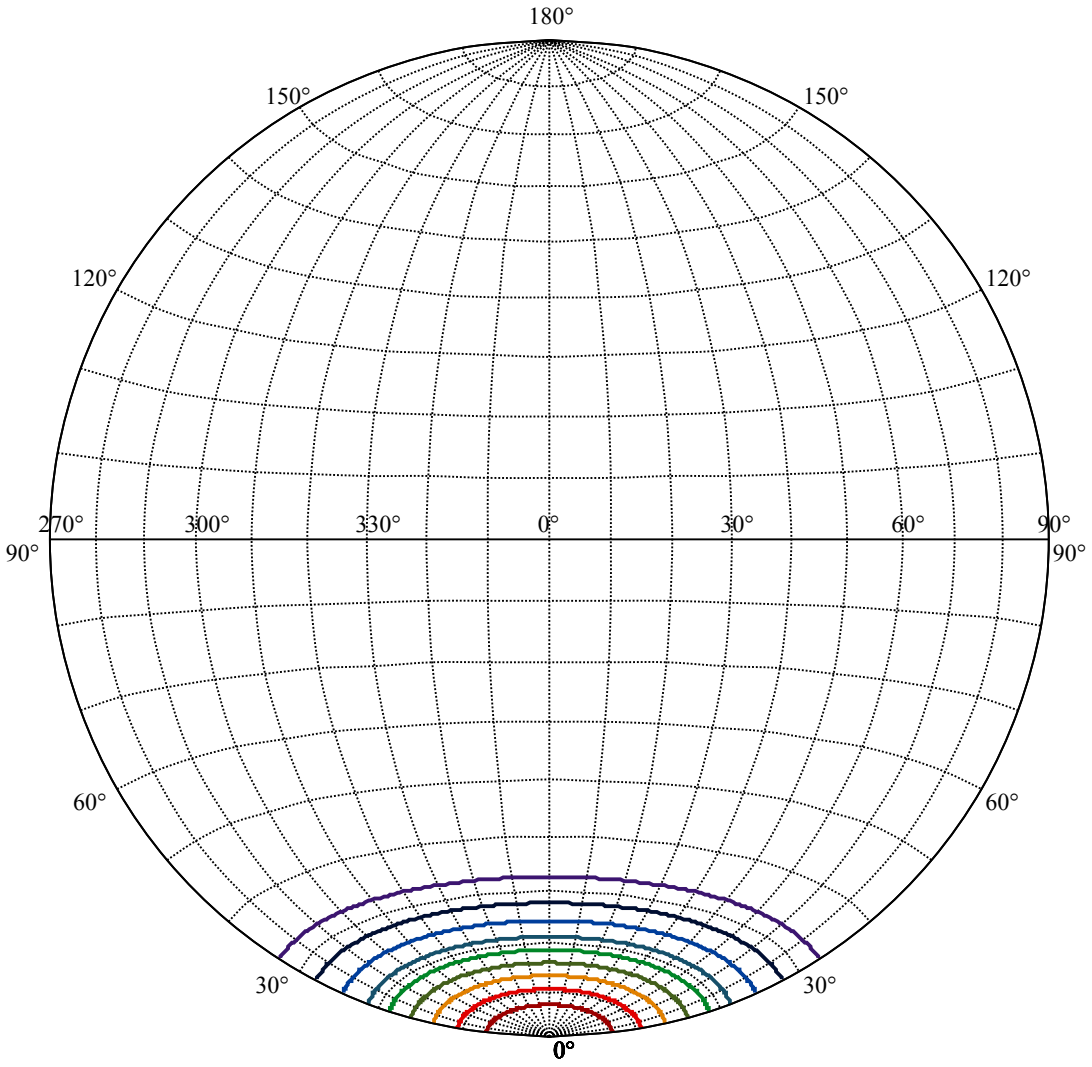

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2023/7/18
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.44

ISO candela diagram on circular web






House [Unit:cd] Road

Imax:6580.10

(10%Imax) 658.01
(20%Imax) 1316.02
(30%Imax) 1974.03
(40%Imax) 2632.04
(50%Imax) 3290.05
(60%Imax) 3948.06
(70%Imax) 4606.07
(80%Imax) 5264.08
(90%Imax) 5922.09

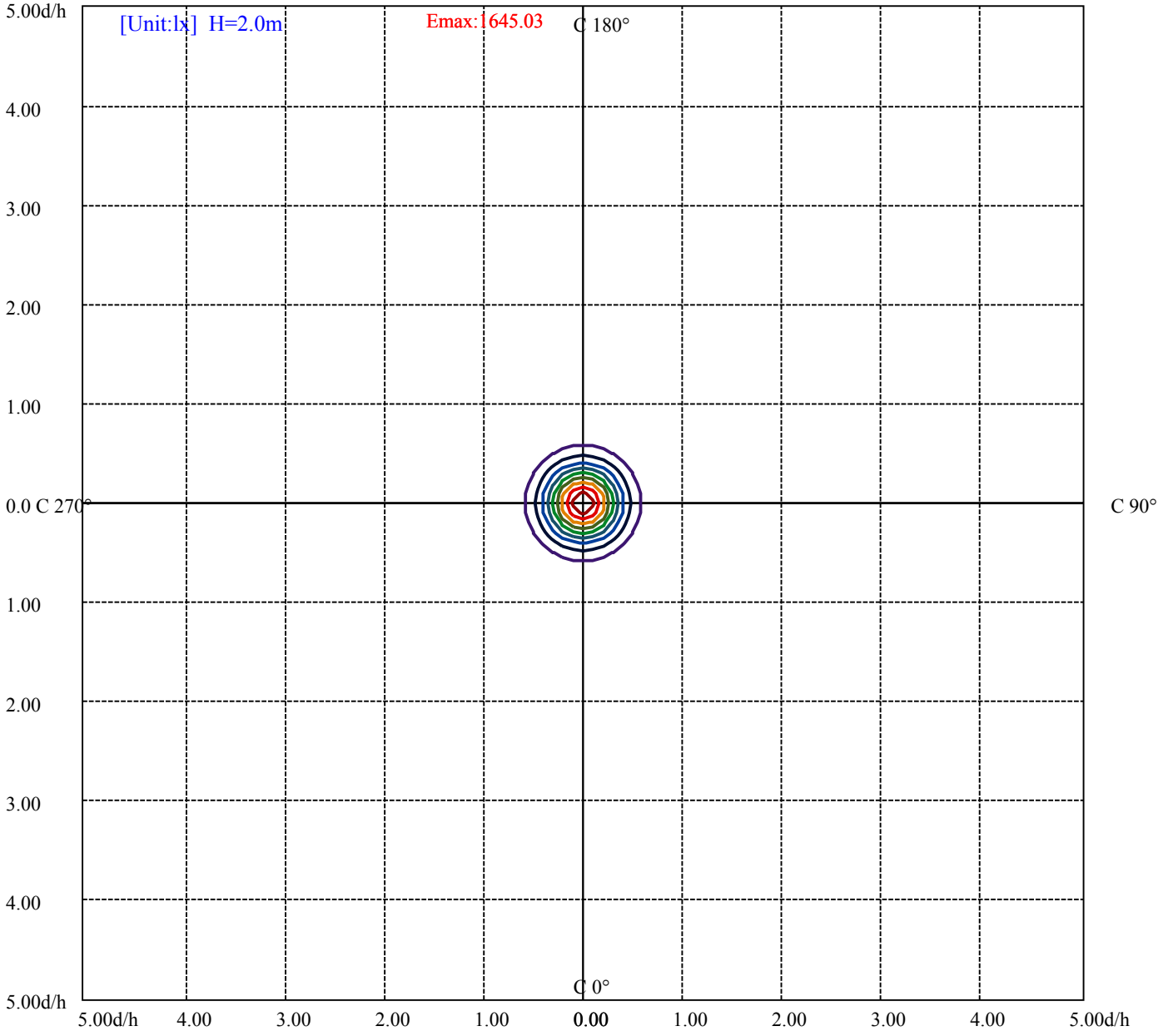
Equipment: GMS1980
Temperature(°C): 25.0

Date: 2023/7/18
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.44

## ISO illuminance diagram



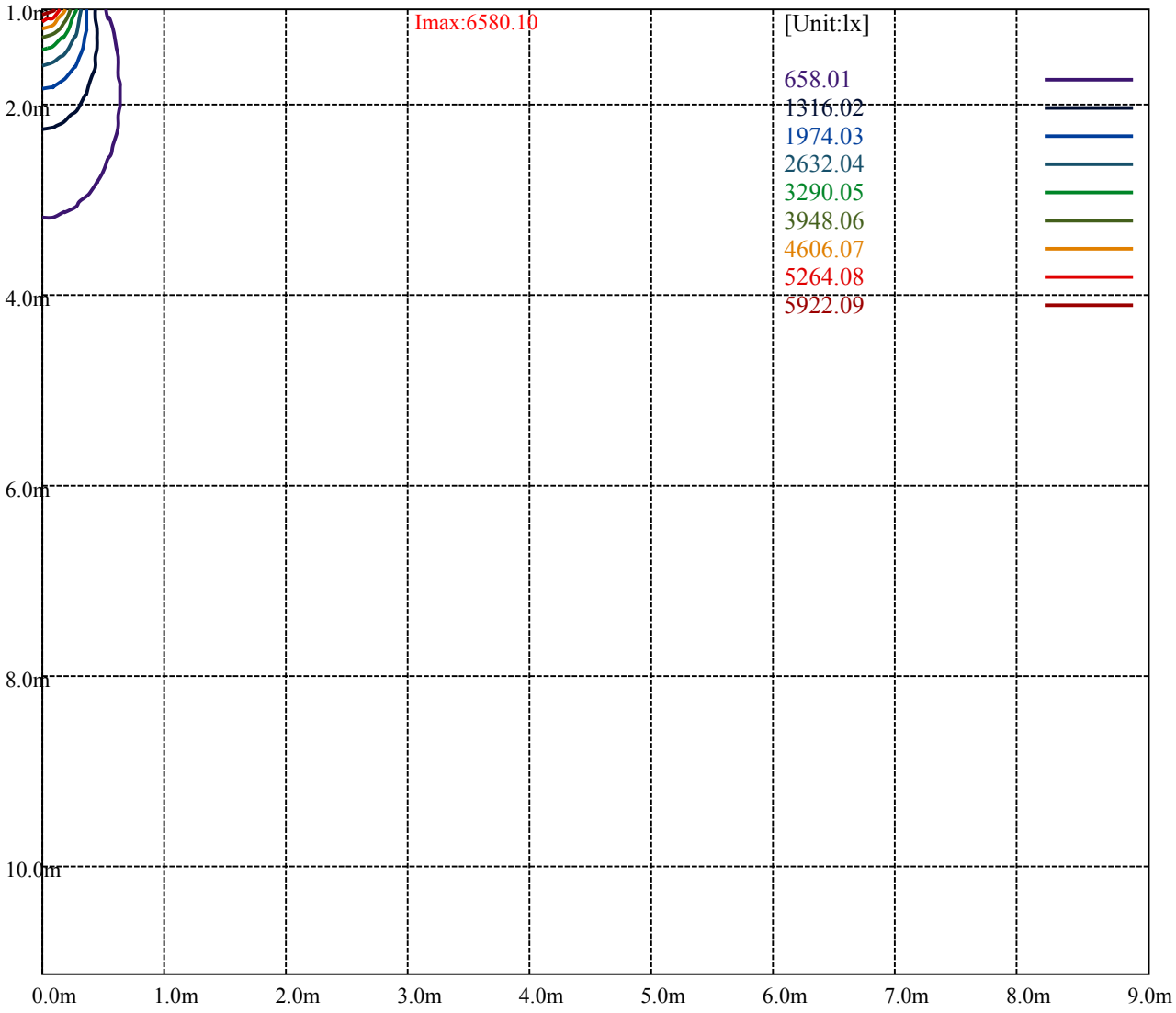



(10%Emax) 164.5025
(20%Emax) 329.005
(30%Emax) 493.5075
(40%Emax) 658.01
(50%Emax) 822.5125
(60%Emax) 987.015
(70%Emax) 1151.517
(80%Emax) 1316.02
(90%Emax) 1480.522

Equipment: GMS1980
Temperature(°C): 25.0
Date: 2023/7/18
Humidity(%): 60.0%
Operator: NT07
Distance(m): 7.44

Space ISO Lux diagram






Equipment: GMS1980
Temperature(°C): 25.0

Date: 2023/7/18
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.44

## Luminance Limitting Curve(no luminous side)



Luminance Table

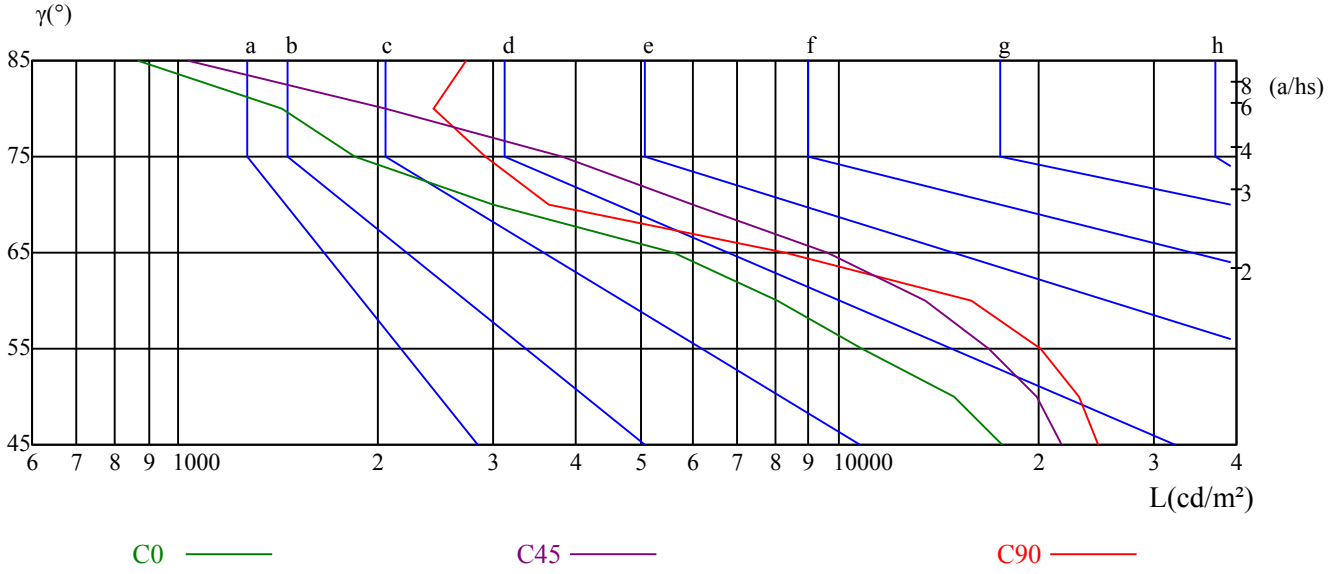
| γ | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 |
|---|---|---|---|---|---|---|---|---|---|
| C0 | 17707 | 14902 | 10843 | 8081 | 5637 | 2993 | 1851 | 1437 | 868 |
| C45 | 21736 | 19918 | 16903 | 13532 | 9602 | 6004 | 3809 | 2064 | 1031 |
| C90 | 24698 | 23118 | 20255 | 15854 | 8293 | 3645 | 2908 | 2436 | 2724 |

| L(Hor)(65) | L(Ver)(65) | L45(65) | L(Hor)(75) | L(Ver)(75) | L45(75) | L(Hor)(85) | L(Ver)(85) | L45(85) |
|---|---|---|---|---|---|---|---|---|
| 10642 | 10437 | 15758 | 4678 | 3676 | 7686 | 4962 | 3969 | 5458 |

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



UGR Glare

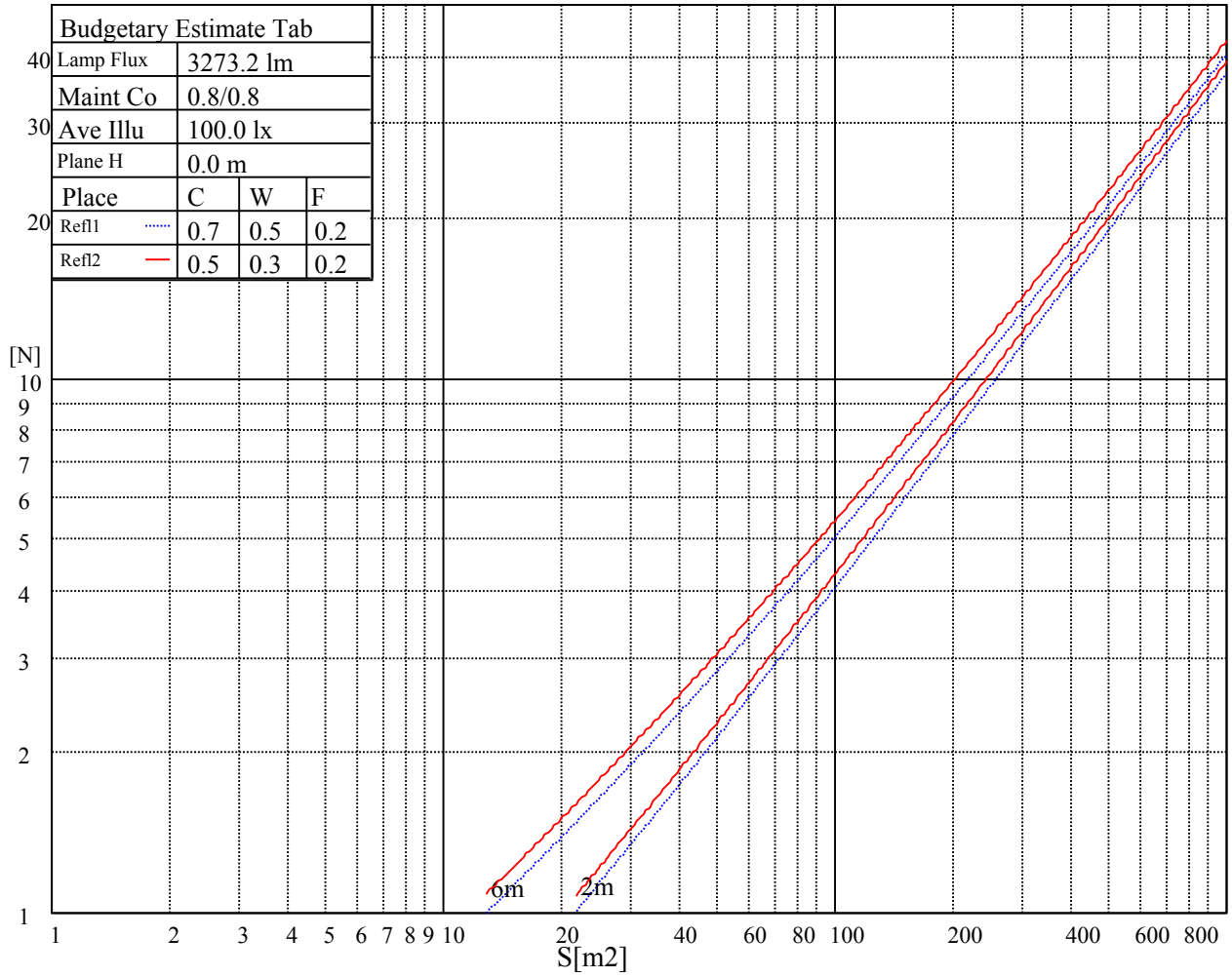


| Illumination assessment according UGR | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Rf of Ceiling | | 70 | 70 | 50 | 50 | 30 | 70 | 70 | 50 | 50 | 30 |
| Rf of Wall | | 50 | 30 | 50 | 30 | 30 | 50 | 30 | 50 | 30 | 30 |
| Rf of Floor | | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 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: 2023/7/18 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.44

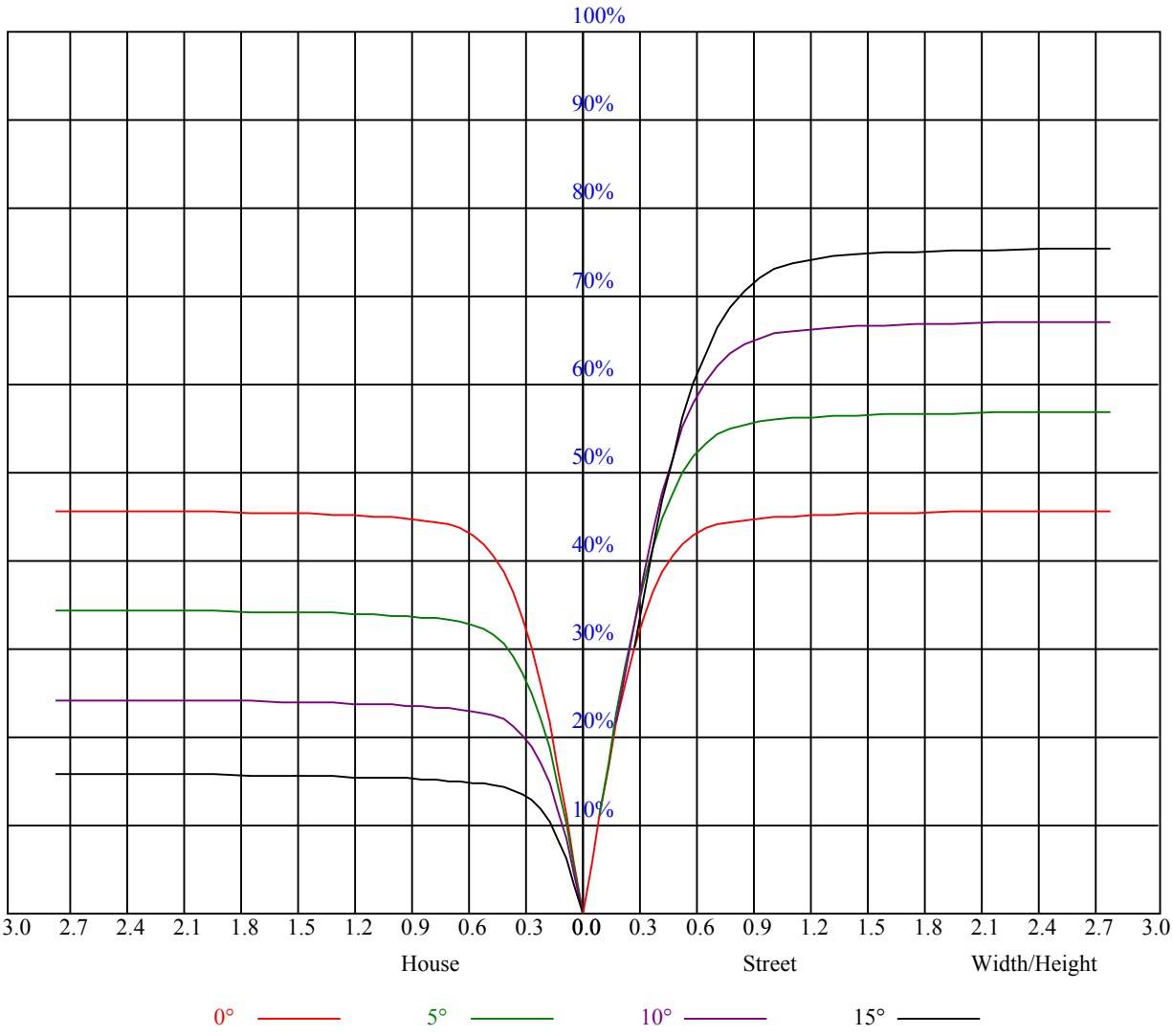
Utilization factor table for indoor luminaire



| 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 | 1.10 | 1.10 | 1.10 | 1.07 | 1.07 | 1.07 | 1.02 | 1.02 | 1.02 | 0.98 | 0.98 | 0.98 | 0.94 | 0.94 | 0.94 | 0.92 |
| 1 | 1.03 | 1.00 | 0.98 | 1.01 | 0.99 | 0.97 | 0.97 | 0.95 | 0.94 | 0.93 | 0.92 | 0.91 | 0.90 | 0.89 | 0.88 | 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 | 0.87 | 0.83 | 0.90 | 0.86 | 0.83 | 0.87 | 0.84 | 0.81 | 0.85 | 0.82 | 0.80 | 0.83 | 0.81 | 0.79 | 0.78 |
| 4 | 0.86 | 0.81 | 0.78 | 0.85 | 0.81 | 0.78 | 0.83 | 0.79 | 0.77 | 0.81 | 0.78 | 0.76 | 0.80 | 0.77 | 0.75 | 0.74 |
| 5 | 0.82 | 0.77 | 0.73 | 0.81 | 0.76 | 0.73 | 0.79 | 0.75 | 0.72 | 0.78 | 0.74 | 0.72 | 0.76 | 0.73 | 0.71 | 0.70 |
| 6 | 0.78 | 0.73 | 0.69 | 0.77 | 0.72 | 0.69 | 0.76 | 0.72 | 0.69 | 0.74 | 0.71 | 0.68 | 0.73 | 0.70 | 0.68 | 0.67 |
| 7 | 0.74 | 0.69 | 0.66 | 0.73 | 0.69 | 0.66 | 0.72 | 0.68 | 0.65 | 0.71 | 0.68 | 0.65 | 0.70 | 0.67 | 0.65 | 0.64 |
| 8 | 0.71 | 0.66 | 0.63 | 0.70 | 0.66 | 0.63 | 0.69 | 0.65 | 0.62 | 0.68 | 0.65 | 0.62 | 0.68 | 0.64 | 0.62 | 0.61 |
| 9 | 0.68 | 0.63 | 0.60 | 0.67 | 0.63 | 0.60 | 0.67 | 0.62 | 0.60 | 0.66 | 0.62 | 0.59 | 0.65 | 0.62 | 0.59 | 0.58 |
| 10 | 0.65 | 0.60 | 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 |

## Coefficient Utilization Curve






| | | |
|---|---|---|
| Equipment: GMS1980 | Date: 2023/7/18 | Operator: NT07 |
| Temperature(°C): 25.0 | Humidity(%): 60.0% | 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 | 6562.67 | 6505.10 | 6408.78 | 6311.36 | 6198.44 | 6030.72 | 5879.05 | 5710.22 | 5473.31 |
| 45.0 | 6585.36 | 6558.79 | 6505.65 | 6410.45 | 6306.38 | 6190.69 | 6048.99 | 5866.87 | 5687.53 |
| 90.0 | 6572.63 | 6516.17 | 6432.59 | 6346.23 | 6226.12 | 6105.45 | 5918.35 | 5752.29 | 5556.89 |
| 135.0 | 6599.75 | 6595.33 | 6556.58 | 6503.99 | 6404.36 | 6298.63 | 6174.64 | 6003.04 | 5830.89 |
| 180.0 | 6562.67 | 6593.67 | 6592.56 | 6569.31 | 6527.24 | 6427.60 | 6340.15 | 6229.99 | 6098.80 |
| 225.0 | 6585.36 | 6595.88 | 6566.54 | 6521.15 | 6428.71 | 6340.15 | 6229.44 | 6057.29 | 5900.08 |
| 270.0 | 6572.63 | 6599.75 | 6592.56 | 6560.45 | 6505.65 | 6425.39 | 6313.58 | 6196.23 | 6026.29 |
| 315.0 | 6599.75 | 6584.81 | 6535.54 | 6464.14 | 6375.02 | 6268.19 | 6113.20 | 5959.87 | 5794.91 |
| 360.0 | 6562.67 | 6505.10 | 6408.78 | 6311.36 | 6198.44 | 6030.72 | 5879.05 | 5710.22 | 5473.31 |

| C/γ(°) | 9.0 | 10.0 | 11.0 | 12.0 | 13.0 | 14.0 | 15.0 | 16.0 | 17.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 5270.16 | 5057.60 | 4832.87 | 4558.87 | 4334.13 | 4106.07 | 3878.02 | 3576.34 | 3336.11 |
| 45.0 | 5503.20 | 5305.03 | 5041.00 | 4822.90 | 4562.19 | 4340.22 | 4109.95 | 3816.02 | 3580.22 |
| 90.0 | 5309.46 | 5091.92 | 4878.26 | 4612.56 | 4382.84 | 4165.30 | 3869.71 | 3625.05 | 3384.26 |
| 135.0 | 5653.76 | 5456.70 | 5189.90 | 4979.55 | 4759.25 | 4532.30 | 4242.80 | 4003.67 | 3760.11 |
| 180.0 | 5906.73 | 5739.56 | 5543.61 | 5346.55 | 5069.78 | 4850.03 | 4572.71 | 4338.56 | 4102.20 |
| 225.0 | 5719.63 | 5489.36 | 5289.53 | 5089.15 | 4871.06 | 4598.72 | 4385.06 | 4160.87 | 3924.51 |
| 270.0 | 5869.64 | 5694.72 | 5504.31 | 5248.57 | 5040.44 | 4822.35 | 4598.17 | 4320.29 | 4081.72 |
| 315.0 | 5608.92 | 5362.60 | 5150.60 | 4935.83 | 4712.20 | 4433.21 | 4206.82 | 3921.19 | 3680.41 |
| 360.0 | 5270.16 | 5057.60 | 4832.87 | 4558.87 | 4334.13 | 4106.07 | 3878.02 | 3576.34 | 3336.11 |

| C/γ(°) | 18.0 | 19.0 | 20.0 | 21.0 | 22.0 | 23.0 | 24.0 | 25.0 | 26.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 3098.64 | 2806.37 | 2577.76 | 2322.03 | 2133.83 | 1962.78 | 1803.36 | 1602.98 | 1436.37 |
| 45.0 | 3338.32 | 3098.64 | 2804.71 | 2572.23 | 2371.29 | 2181.98 | 1967.77 | 1803.36 | 1638.96 |
| 90.0 | 3144.03 | 2842.35 | 2612.63 | 2396.20 | 2207.45 | 1983.26 | 1824.40 | 1622.91 | 1453.53 |
| 135.0 | 3457.33 | 3214.33 | 2967.45 | 2675.74 | 2453.22 | 2256.16 | 2069.62 | 1863.15 | 1705.39 |
| 180.0 | 3814.36 | 3552.54 | 3305.66 | 3071.52 | 2757.11 | 2511.89 | 2309.85 | 2120.54 | 1901.89 |
| 225.0 | 3616.75 | 3366.55 | 3114.14 | 2813.01 | 2576.10 | 2315.94 | 2124.42 | 1947.84 | 1784.54 |
| 270.0 | 3864.73 | 3610.11 | 3308.98 | 3072.07 | 2832.94 | 2539.57 | 2334.21 | 2105.60 | 1929.02 |
| 315.0 | 3431.31 | 3134.62 | 2892.72 | 2666.88 | 2453.22 | 2213.54 | 2038.06 | 1874.22 | 1717.01 |
| 360.0 | 3098.64 | 2806.37 | 2577.76 | 2322.03 | 2133.83 | 1962.78 | 1803.36 | 1602.98 | 1436.37 |

| C/γ(°) | 27.0 | 28.0 | 29.0 | 30.0 | 31.0 | 32.0 | 33.0 | 34.0 | 35.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 1074.52 | 1074.52 | 933.70 | 804.90 | 687.49 | 577.39 | 455.34 | 366.94 | 271.68 |
| 45.0 | 1421.43 | 1253.15 | 1099.27 | 926.56 | 800.91 | 685.22 | 557.36 | 463.81 | 376.90 |
| 90.0 | 1092.18 | 1092.18 | 951.53 | 826.93 | 681.62 | 576.56 | 479.69 | 391.13 | 293.21 |
| 135.0 | 1539.88 | 1333.97 | 1180.08 | 1039.49 | 906.64 | 758.29 | 648.69 | 547.39 | 430.04 |
| 180.0 | 1748.01 | 1591.91 | 1389.32 | 1231.56 | 1080.45 | 912.73 | 789.29 | 649.24 | 548.50 |
| 225.0 | 1581.40 | 1289.13 | 1093.51 | 1093.51 | 919.26 | 794.93 | 680.19 | 576.95 | 461.82 |
| 270.0 | 1769.60 | 1562.58 | 1395.96 | 1227.13 | 1070.48 | 893.91 | 766.59 | 654.78 | 553.48 |
| 315.0 | 1516.08 | 1069.60 | 1069.60 | 994.32 | 860.31 | 734.87 | 593.56 | 493.42 | 383.38 |
| 360.0 | 1074.52 | 1074.52 | 933.70 | 804.90 | 687.49 | 577.39 | 455.34 | 366.94 | 271.68 |

| C/γ(°) | 36.0 | 37.0 | 38.0 | 39.0 | 40.0 | 41.0 | 42.0 | 43.0 | 44.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 209.02 | 160.80 | 124.27 | 110.49 | 101.74 | 93.82 | 85.19 | 79.54 | 74.23 |
| 45.0 | 298.85 | 281.14 | 201.43 | 127.15 | 111.65 | 100.85 | 93.27 | 86.41 | 79.38 |
| 90.0 | 226.62 | 172.65 | 133.85 | 110.04 | 100.41 | 91.94 | 83.20 | 77.33 | 70.80 |
| 135.0 | 345.35 | 287.23 | 287.23 | 143.09 | 118.51 | 104.56 | 95.93 | 88.79 | 82.31 |
| 180.0 | 453.84 | 368.60 | 291.66 | 291.66 | 156.76 | 126.26 | 110.60 | 99.25 | 91.83 |
| 225.0 | 377.90 | 283.30 | 218.48 | 167.06 | 126.43 | 110.82 | 101.74 | 91.78 | 84.80 |
| 270.0 | 438.90 | 355.87 | 297.75 | 297.75 | 149.12 | 122.17 | 107.61 | 98.70 | 91.33 |
| 315.0 | 303.28 | 236.30 | 181.78 | 143.53 | 117.07 | 107.16 | 98.53 | 91.06 | 82.86 |
| 360.0 | 209.02 | 160.80 | 124.27 | 110.49 | 101.74 | 93.82 | 85.19 | 79.54 | 74.23 |

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 | 69.36 | 63.66 | 59.73 | 56.02 | 51.92 | 48.82 | 46.11 | 43.07 | 40.80 |
| 45.0 | 74.34 | 69.80 | 64.38 | 60.56 | 55.96 | 52.81 | 49.82 | 47.22 | 44.23 |
| 90.0 | 66.09 | 61.61 | 57.68 | 53.25 | 49.98 | 47.11 | 44.50 | 41.63 | 39.47 |
| 135.0 | 75.28 | 70.30 | 65.70 | 60.34 | 56.52 | 52.97 | 48.99 | 46.16 | 43.07 |
| 180.0 | 84.91 | 77.66 | 72.62 | 67.97 | 62.44 | 58.62 | 54.19 | 50.98 | 47.94 |
| 225.0 | 78.93 | 73.68 | 67.75 | 63.27 | 59.23 | 55.52 | 51.37 | 48.21 | 45.50 |
| 270.0 | 83.09 | 77.38 | 72.35 | 67.75 | 62.33 | 58.56 | 55.08 | 51.92 | 48.16 |
| 315.0 | 77.44 | 72.35 | 66.54 | 62.27 | 57.62 | 54.19 | 50.93 | 47.11 | 44.50 |
| 360.0 | 69.36 | 63.66 | 59.73 | 56.02 | 51.92 | 48.82 | 46.11 | 43.07 | 40.80 |

| C/γ(°) | 54.0 | 55.0 | 56.0 | 57.0 | 58.0 | 59.0 | 60.0 | 61.0 | 62.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 38.42 | 36.64 | 35.09 | 33.54 | 31.94 | 30.78 | 29.61 | 28.62 | 27.46 |
| 45.0 | 42.01 | 40.08 | 38.25 | 36.26 | 34.76 | 33.38 | 31.77 | 30.61 | 29.50 |
| 90.0 | 37.59 | 35.92 | 33.99 | 32.60 | 31.05 | 29.95 | 28.84 | 27.68 | 26.79 |
| 135.0 | 40.85 | 38.91 | 37.09 | 35.48 | 33.65 | 32.27 | 31.05 | 29.61 | 28.56 |
| 180.0 | 45.33 | 42.35 | 40.35 | 38.47 | 36.87 | 34.98 | 33.60 | 32.27 | 30.83 |
| 225.0 | 42.40 | 40.30 | 37.97 | 36.31 | 34.76 | 33.32 | 31.72 | 30.50 | 29.45 |
| 270.0 | 45.56 | 43.07 | 40.41 | 38.53 | 36.42 | 34.93 | 33.43 | 32.22 | 30.67 |
| 315.0 | 42.07 | 39.91 | 37.47 | 35.76 | 34.26 | 32.82 | 31.22 | 30.00 | 28.95 |
| 360.0 | 38.42 | 36.64 | 35.09 | 33.54 | 31.94 | 30.78 | 29.61 | 28.62 | 27.46 |

| C/γ(°) | 63.0 | 64.0 | 65.0 | 66.0 | 67.0 | 68.0 | 69.0 | 70.0 | 71.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 26.57 | 25.74 | 24.91 | 23.97 | 23.25 | 22.31 | 21.64 | 20.98 | 20.26 |
| 45.0 | 28.17 | 27.23 | 26.40 | 25.35 | 24.52 | 23.80 | 23.03 | 22.03 | 21.37 |
| 90.0 | 25.96 | 25.02 | 24.19 | 23.53 | 22.81 | 21.92 | 21.31 | 20.65 | 20.09 |
| 135.0 | 27.62 | 26.74 | 25.74 | 24.85 | 23.91 | 23.25 | 22.47 | 21.59 | 20.92 |
| 180.0 | 29.72 | 28.67 | 27.46 | 26.57 | 25.68 | 24.63 | 23.86 | 23.14 | 22.20 |
| 225.0 | 28.34 | 27.18 | 26.29 | 25.41 | 24.58 | 23.69 | 22.92 | 22.09 | 21.42 |
| 270.0 | 29.56 | 28.45 | 27.51 | 26.35 | 25.52 | 24.69 | 23.91 | 22.92 | 22.20 |
| 315.0 | 27.68 | 26.74 | 25.85 | 24.85 | 24.08 | 23.30 | 22.42 | 21.75 | 21.03 |
| 360.0 | 26.57 | 25.74 | 24.91 | 23.97 | 23.25 | 22.31 | 21.64 | 20.98 | 20.26 |

| C/γ(°) | 72.0 | 73.0 | 74.0 | 75.0 | 76.0 | 77.0 | 78.0 | 79.0 | 80.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 19.60 | 19.04 | 18.43 | 17.77 | 17.21 | 16.72 | 16.22 | 15.61 | 15.11 |
| 45.0 | 20.65 | 19.98 | 19.21 | 18.65 | 18.05 | 17.33 | 16.83 | 16.16 | 15.67 |
| 90.0 | 19.32 | 18.76 | 18.21 | 17.55 | 17.05 | 16.44 | 15.94 | 15.50 | 15.00 |
| 135.0 | 20.31 | 19.71 | 18.88 | 18.38 | 17.82 | 17.27 | 16.66 | 16.16 | 15.72 |
| 180.0 | 21.53 | 20.87 | 20.20 | 19.60 | 18.76 | 18.21 | 17.55 | 16.99 | 16.44 |
| 225.0 | 20.76 | 19.98 | 19.32 | 18.71 | 18.16 | 17.44 | 16.88 | 16.38 | 15.94 |
| 270.0 | 21.37 | 20.70 | 20.04 | 19.26 | 18.60 | 18.05 | 17.33 | 16.83 | 16.27 |
| 315.0 | 20.43 | 19.60 | 18.99 | 18.43 | 17.82 | 17.10 | 16.61 | 16.00 | 15.55 |
| 360.0 | 19.60 | 19.04 | 18.43 | 17.77 | 17.21 | 16.72 | 16.22 | 15.61 | 15.11 |

| C/γ(°) | 81.0 | 82.0 | 83.0 | 84.0 | 85.0 | 86.0 | 87.0 | 88.0 | 89.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 14.67 | 14.23 | 13.78 | 13.45 | 13.17 | 12.90 | 12.62 | 12.51 | 12.45 |
| 45.0 | 15.11 | 14.56 | 14.12 | 13.78 | 13.40 | 13.06 | 12.84 | 12.57 | 12.40 |
| 90.0 | 14.45 | 14.00 | 13.73 | 13.34 | 13.06 | 12.84 | 12.62 | 12.34 | 12.29 |
| 135.0 | 15.17 | 14.67 | 14.12 | 13.78 | 13.40 | 13.12 | 12.84 | 12.57 | 12.34 |
| 180.0 | 15.83 | 15.39 | 14.78 | 14.34 | 13.89 | 13.56 | 13.23 | 13.01 | 12.68 |
| 225.0 | 15.33 | 14.78 | 14.34 | 13.95 | 13.67 | 13.34 | 13.01 | 12.79 | 12.51 |
| 270.0 | 15.78 | 15.22 | 14.67 | 14.17 | 13.73 | 13.40 | 13.06 | 12.79 | 12.57 |
| 315.0 | 15.06 | 14.50 | 14.06 | 13.67 | 13.34 | 13.06 | 12.79 | 12.51 | 12.34 |
| 360.0 | 14.67 | 14.23 | 13.78 | 13.45 | 13.17 | 12.90 | 12.62 | 12.51 | 12.45 |

Intensity data(cd)



| C/γ(°) | 90.0 |
|---|---|
| 0.0 | 12.45 |
| 45.0 | 12.40 |
| 90.0 | 12.29 |
| 135.0 | 12.29 |
| 180.0 | 12.45 |
| 225.0 | 12.40 |
| 270.0 | 12.34 |
| 315.0 | 12.29 |
| 360.0 | 12.45 |