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

Nata

Client:
LumCAT: 2-2759-L
Luminaire: 92.70.411.00
Report No: 2024910-B014
Ballast type: AC
Test No: 2024910-C014
LampCAT: NICHIA NFCWJ120B-V3
Lamp flux(lm): 2597.0
Number of Lamps: 1
Length(mm): 0
Phm Type: C

Voltage(V): 33.890
Current(A): 0.580
Power (W): 19.640
PF: 0.000
Width(mm): 0
Height(mm): 0

## Photometric Results

Lumens(lm): 2419.53, Efficiency(%): 93.17% , Luminous Efficacy(lm/W): 123.19
Central intensity(cd): 4972.833, Maximum intensity(cd): 4972.833
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=38.2
[C90/270]Total=38.2
Field angle(10%Imax): [C0/180]Total=69.0
[C90/270]Total=69.0
Maximum s/h(1/2): C0_180=0.61 C90_270=0.61
Maximum s/h(1/4): C0_180=0.65 C90_270=0.65
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 93.17%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 99.188%

Nata 2-2759-L

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 0.0 | 4972.833 | 0.000 | 0 | 0.00% | 0.00% |
| 1.0 | 4962.938 | 4.754 | 4.754 | 0.18% | 0.20% |
| 2.0 | 4938.641 | 14.212 | 18.966 | 0.55% | 0.78% |
| 3.0 | 4894.265 | 23.517 | 42.483 | 0.91% | 1.76% |
| 4.0 | 4826.506 | 32.539 | 75.021 | 1.25% | 3.10% |
| 5.0 | 4740.494 | 41.157 | 116.178 | 1.58% | 4.80% |
| 6.0 | 4636.098 | 49.276 | 165.455 | 1.90% | 6.84% |
| 7.0 | 4509.685 | 56.768 | 222.222 | 2.19% | 9.18% |
| 8.0 | 4372.839 | 63.571 | 285.793 | 2.45% | 11.81% |
| 9.0 | 4223.022 | 69.665 | 355.458 | 2.68% | 14.69% |
| 10.0 | 4063.955 | 74.994 | 430.452 | 2.89% | 17.79% |
| 11.0 | 3896.458 | 79.541 | 509.993 | 3.06% | 21.08% |
| 12.0 | 3721.793 | 83.278 | 593.271 | 3.21% | 24.52% |
| 13.0 | 3549.355 | 86.290 | 679.561 | 3.32% | 28.09% |
| 14.0 | 3372.587 | 88.600 | 768.161 | 3.41% | 31.75% |
| 15.0 | 3196.326 | 90.181 | 858.342 | 3.47% | 35.48% |
| 16.0 | 3016.286 | 91.032 | 949.375 | 3.51% | 39.24% |
| 17.0 | 2843.973 | 91.260 | 1040.635 | 3.51% | 43.01% |
| 18.0 | 2660.398 | 90.755 | 1131.39 | 3.49% | 46.76% |
| 19.0 | 2500.346 | 89.786 | 1221.176 | 3.46% | 50.47% |
| 20.0 | 2327.356 | 88.360 | 1309.536 | 3.40% | 54.12% |
| 21.0 | 2151.015 | 85.994 | 1395.53 | 3.31% | 57.68% |
| 22.0 | 2025.378 | 83.926 | 1479.457 | 3.23% | 61.15% |
| 23.0 | 1862.953 | 81.588 | 1561.044 | 3.14% | 64.52% |
| 24.0 | 1738.018 | 78.730 | 1639.774 | 3.03% | 67.77% |
| 25.0 | 1600.186 | 75.903 | 1715.678 | 2.92% | 70.91% |
| 26.0 | 1469.595 | 72.463 | 1788.14 | 2.79% | 73.90% |
| 27.0 | 1357.840 | 69.174 | 1857.314 | 2.66% | 76.76% |
| 28.0 | 1235.015 | 65.646 | 1922.96 | 2.53% | 79.48% |
| 29.0 | 1102.446 | 61.155 | 1984.114 | 2.35% | 82.00% |
| 30.0 | 992.998 | 56.577 | 2040.691 | 2.18% | 84.34% |
| 31.0 | 889.003 | 52.373 | 2093.064 | 2.02% | 86.51% |
| 32.0 | 770.632 | 47.547 | 2140.611 | 1.83% | 88.47% |
| 33.0 | 656.749 | 42.051 | 2182.662 | 1.62% | 90.21% |
| 34.0 | 546.532 | 36.415 | 2219.077 | 1.40% | 91.72% |
| 35.0 | 449.606 | 30.936 | 2250.013 | 1.19% | 92.99% |
| 36.0 | 373.660 | 26.213 | 2276.226 | 1.01% | 94.08% |
| 37.0 | 286.682 | 21.537 | 2297.763 | 0.83% | 94.97% |

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 38.0 | 219.455 | 16.894 | 2314.657 | 0.65% | 95.67% |
| 39.0 | 176.735 | 13.523 | 2328.18 | 0.52% | 96.22% |
| 40.0 | 127.116 | 10.597 | 2338.777 | 0.41% | 96.66% |
| 41.0 | 108.305 | 8.383 | 2347.161 | 0.32% | 97.01% |
| 42.0 | 74.218 | 6.631 | 2353.792 | 0.26% | 97.28% |
| 43.0 | 62.076 | 5.049 | 2358.841 | 0.19% | 97.49% |
| 44.0 | 54.087 | 4.384 | 2363.225 | 0.17% | 97.67% |
| 45.0 | 48.036 | 3.925 | 2367.15 | 0.15% | 97.84% |
| 46.0 | 42.944 | 3.558 | 2370.708 | 0.14% | 97.98% |
| 47.0 | 38.568 | 3.242 | 2373.95 | 0.12% | 98.12% |
| 48.0 | 34.810 | 2.966 | 2376.916 | 0.11% | 98.24% |
| 49.0 | 31.439 | 2.721 | 2379.636 | 0.10% | 98.35% |
| 50.0 | 28.555 | 2.501 | 2382.138 | 0.10% | 98.45% |
| 51.0 | 26.084 | 2.312 | 2384.449 | 0.09% | 98.55% |
| 52.0 | 23.949 | 2.147 | 2386.596 | 0.08% | 98.64% |
| 53.0 | 22.122 | 2.004 | 2388.601 | 0.08% | 98.72% |
| 54.0 | 20.480 | 1.878 | 2390.478 | 0.07% | 98.80% |
| 55.0 | 19.264 | 1.774 | 2392.252 | 0.07% | 98.87% |
| 56.0 | 17.924 | 1.680 | 2393.933 | 0.06% | 98.94% |
| 57.0 | 16.873 | 1.591 | 2395.524 | 0.06% | 99.01% |
| 58.0 | 15.992 | 1.520 | 2397.043 | 0.06% | 99.07% |
| 59.0 | 15.092 | 1.453 | 2398.497 | 0.06% | 99.13% |
| 60.0 | 14.363 | 1.392 | 2399.888 | 0.05% | 99.19% |
| 61.0 | 13.666 | 1.338 | 2401.226 | 0.05% | 99.24% |
| 62.0 | 12.983 | 1.284 | 2402.51 | 0.05% | 99.30% |
| 63.0 | 12.332 | 1.231 | 2403.741 | 0.05% | 99.35% |
| 64.0 | 11.695 | 1.179 | 2404.92 | 0.05% | 99.40% |
| 65.0 | 11.064 | 1.126 | 2406.047 | 0.04% | 99.44% |
| 66.0 | 10.467 | 1.074 | 2407.121 | 0.04% | 99.49% |
| 67.0 | 9.862 | 1.022 | 2408.143 | 0.04% | 99.53% |
| 68.0 | 9.212 | 0.966 | 2409.109 | 0.04% | 99.57% |
| 69.0 | 8.594 | 0.908 | 2410.018 | 0.03% | 99.61% |
| 70.0 | 8.062 | 0.855 | 2410.873 | 0.03% | 99.64% |
| 71.0 | 7.536 | 0.806 | 2411.679 | 0.03% | 99.68% |
| 72.0 | 7.070 | 0.759 | 2412.439 | 0.03% | 99.71% |
| 73.0 | 6.603 | 0.715 | 2413.154 | 0.03% | 99.74% |
| 74.0 | 6.209 | 0.674 | 2413.827 | 0.03% | 99.76% |
| 75.0 | 5.775 | 0.633 | 2414.46 | 0.02% | 99.79% |

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 76.0 | 5.388 | 0.593 | 2415.053 | 0.02% | 99.82% |
| 77.0 | 5.020 | 0.555 | 2415.608 | 0.02% | 99.84% |
| 78.0 | 4.612 | 0.516 | 2416.123 | 0.02% | 99.86% |
| 79.0 | 4.205 | 0.474 | 2416.597 | 0.02% | 99.88% |
| 80.0 | 3.817 | 0.433 | 2417.03 | 0.02% | 99.90% |
| 81.0 | 3.509 | 0.396 | 2417.426 | 0.02% | 99.91% |
| 82.0 | 3.147 | 0.361 | 2417.787 | 0.01% | 99.93% |
| 83.0 | 2.786 | 0.323 | 2418.109 | 0.01% | 99.94% |
| 84.0 | 2.490 | 0.287 | 2418.397 | 0.01% | 99.95% |
| 85.0 | 2.188 | 0.255 | 2418.652 | 0.01% | 99.96% |
| 86.0 | 1.932 | 0.225 | 2418.877 | 0.01% | 99.97% |
| 87.0 | 1.669 | 0.197 | 2419.074 | 0.01% | 99.98% |
| 88.0 | 1.432 | 0.170 | 2419.244 | 0.01% | 99.99% |
| 89.0 | 1.288 | 0.149 | 2419.393 | 0.01% | 99.99% |
| 90.0 | 1.170 | 0.135 | 2419.528 | 0.01% | 100.00% |

## Zonal flux distribution table



ZONAL LUMEN SUMMARY

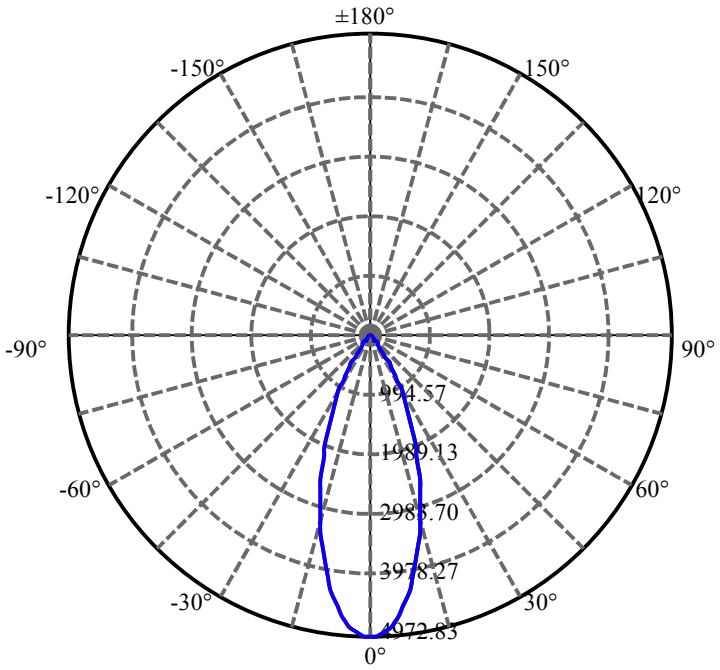
| Zone | Lumens | %Lamp | %Fixt |
|---|---|---|---|
| 0-30 | 2040.69 | 78.58% | 84.34% |
| 0-40 | 2338.78 | 90.06% | 96.66% |
| 0-60 | 2399.89 | 92.41% | 99.19% |
| 0-90 | 2419.39 | 93.16% | 99.99% |
| 0-120 | 2419.39 | 93.16% | 99.99% |
| 0-180 | 2419.53 | 93.17% | 100.00% |
| 60-90 | 19.51 | 0.75% | 0.81% |
| 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% |
| 0-28.21 | 1935.62 | 74.53% | 80.00% |

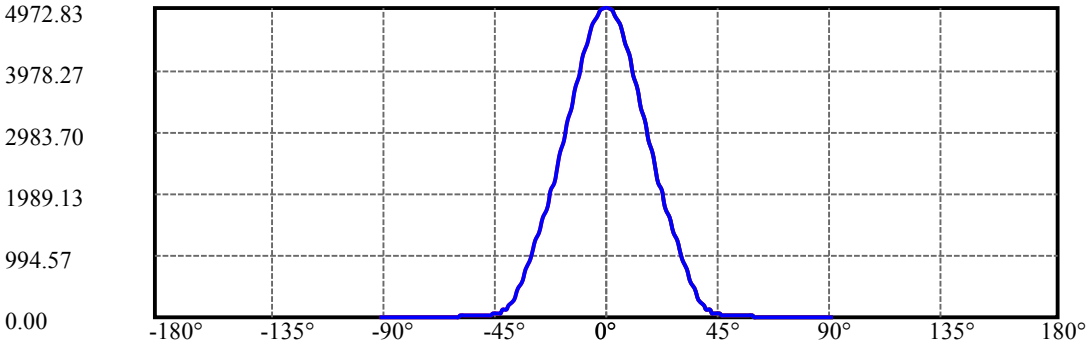
ZONAL LUMEN SUMMARY

| | |
|---|---|
| 0-10 | 430.45 |
| 10-20 | 879.08 |
| 20-30 | 731.15 |
| 30-40 | 298.09 |
| 40-50 | 43.36 |
| 50-60 | 17.75 |
| 60-70 | 10.98 |
| 70-80 | 6.16 |
| 80-90 | 2.36 |
| 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:

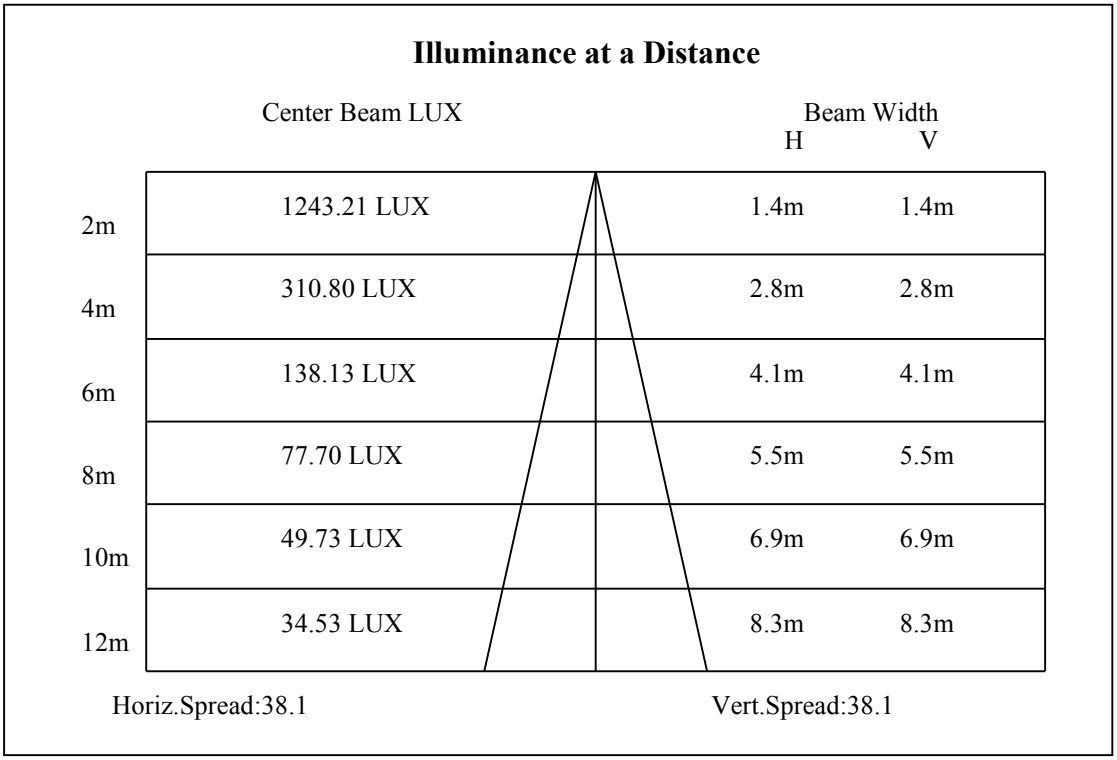
C90/C270:

Field angle(10%Imax):C0/180Left:34.5 Right:34.5
:C90/270Left:34.5 Right:34.5

Beam Angle(50%Imax):C0/180Left:19.1 Right:19.1
:C90/270Left:19.1 Right:19.1

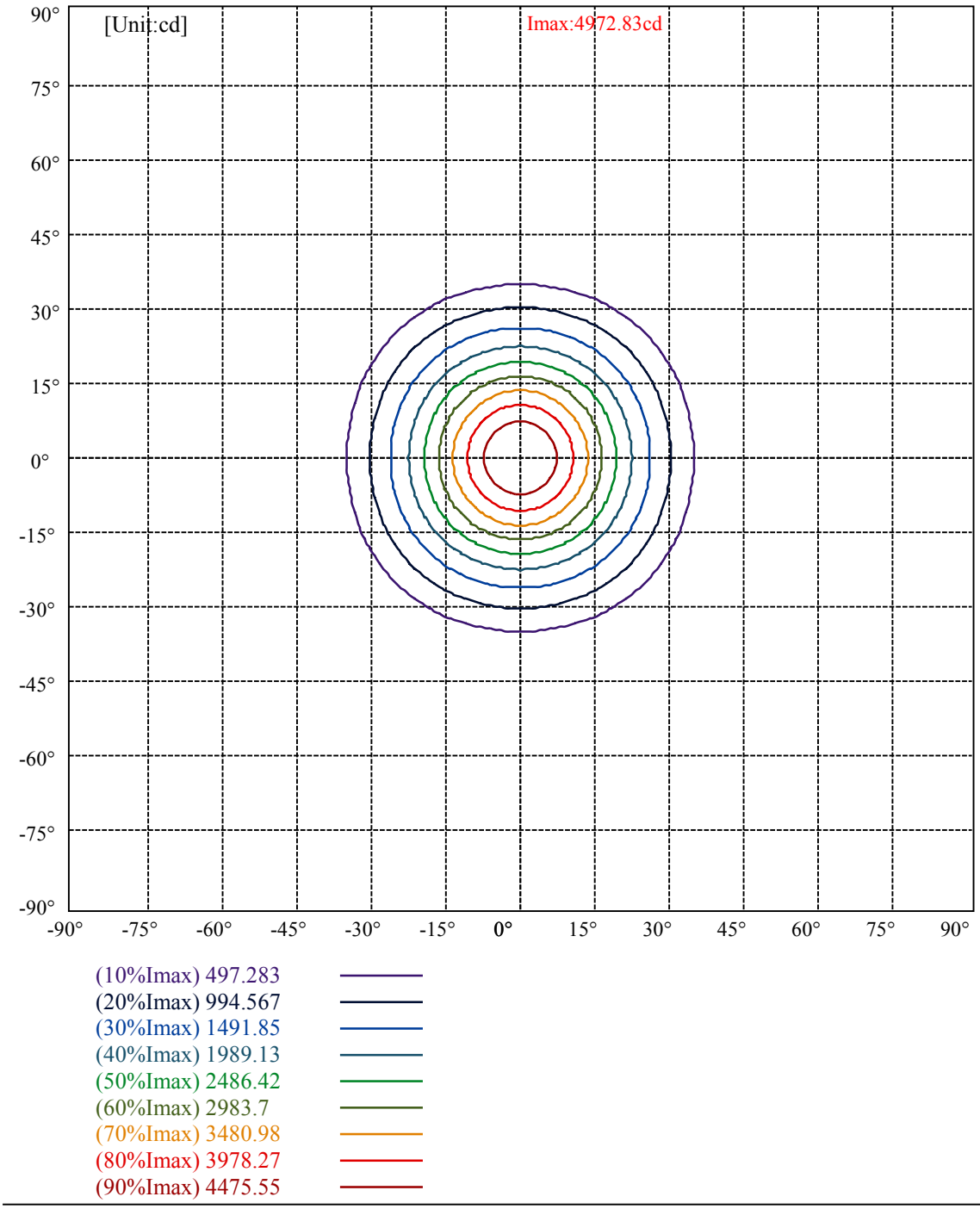
Lux distance Curve





ISO-Intensity(V-H)





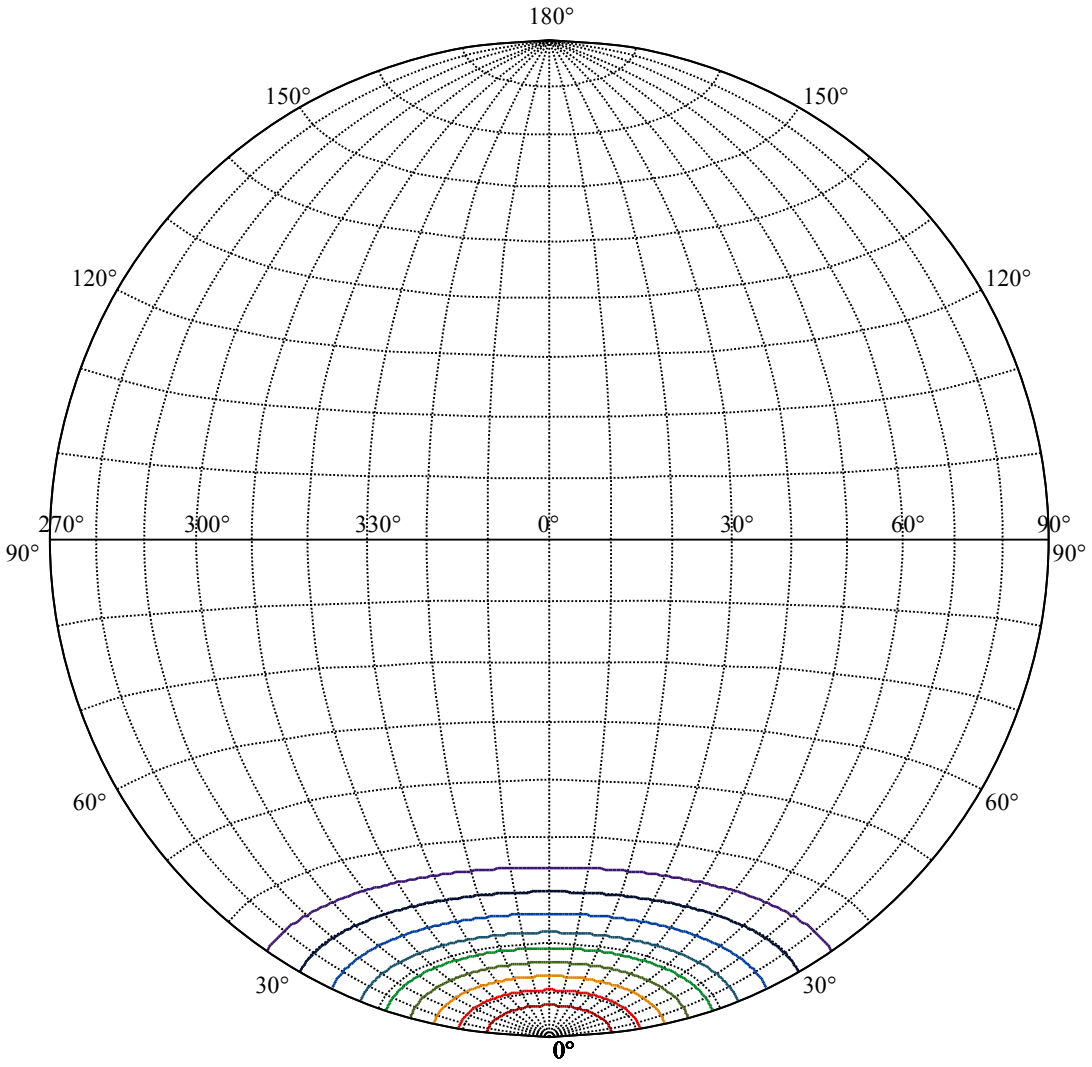

Equipment: GMS 1800
Temperature(°C): 25.0

Date: 2024/9/10
Humidity(%): 60.0%

Operator: NT
Distance(m): 7.25

ISO candela diagram on circular web






House [Unit:cd] Road

Imax:4972.83

(10%Imax) 497.283
(20%Imax) 994.567
(30%Imax) 1491.85
(40%Imax) 1989.13
(50%Imax) 2486.42
(60%Imax) 2983.7
(70%Imax) 3480.98
(80%Imax) 3978.27
(90%Imax) 4475.55

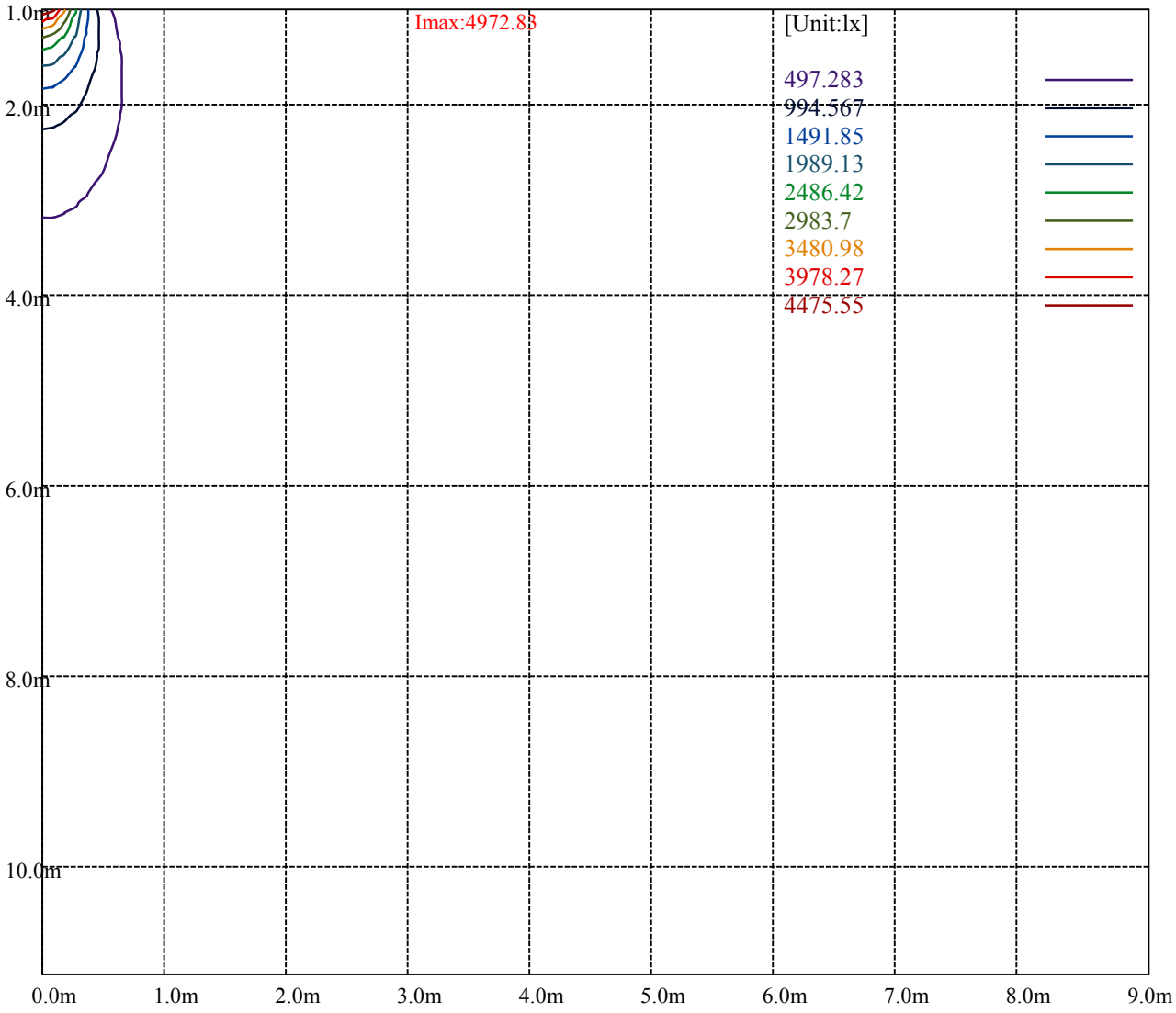
Equipment: GMS 1800
Temperature(°C): 25.0

Date: 2024/9/10
Humidity(%): 60.0%

Operator: NT
Distance(m): 7.25

Space ISO Lux diagram






Equipment: GMS 1800
Temperature(°C): 25.0

Date: 2024/9/10
Humidity(%): 60.0%

Operator: NT
Distance(m): 7.25

## Luminance Limitting Curve(no luminous side)



Luminance Table

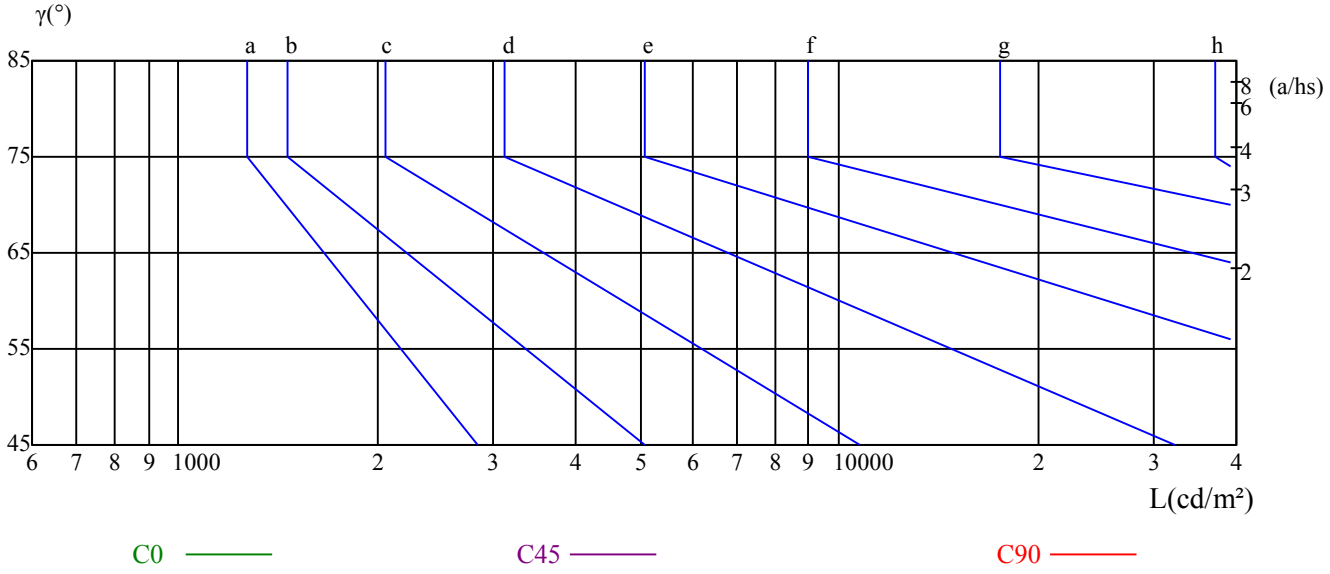
| γ | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 |
|---|---|---|---|---|---|---|---|---|---|
| C0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C90 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| 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

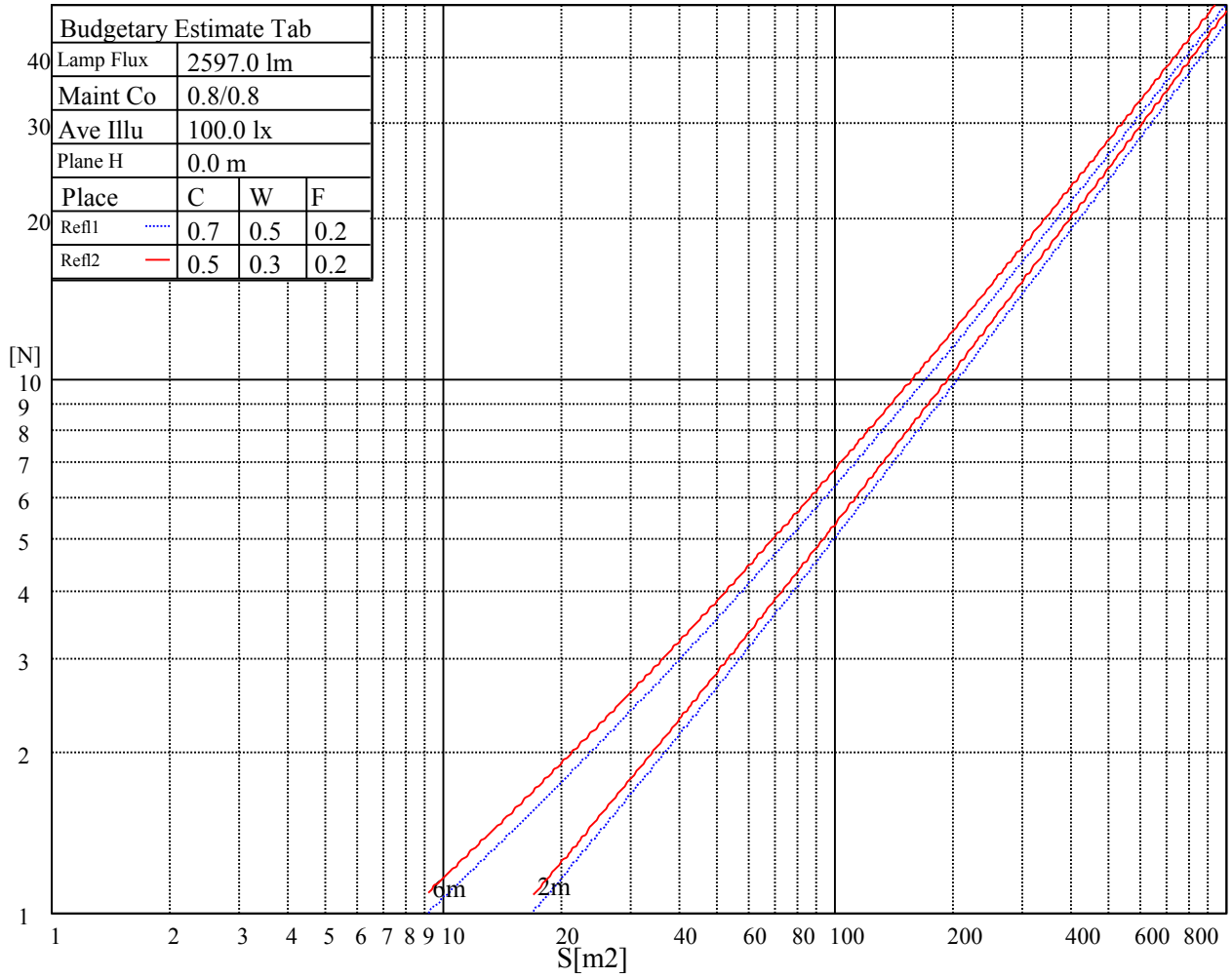


| Illumination assessment according UGR | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Rf of Ceiling | | 70 | 70 | 50 | 50 | 30 | 70 | 70 | 50 | 50 | 30 |
| Rf of Wall | | 50 | 30 | 50 | 30 | 30 | 50 | 30 | 50 | 30 | 30 |
| Rf of Floor | | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 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: GMS 1800
Temperature(°C): 25.0

Date: 2024/9/10
Humidity(%): 60.0%

Operator: NT
Distance(m): 7.25

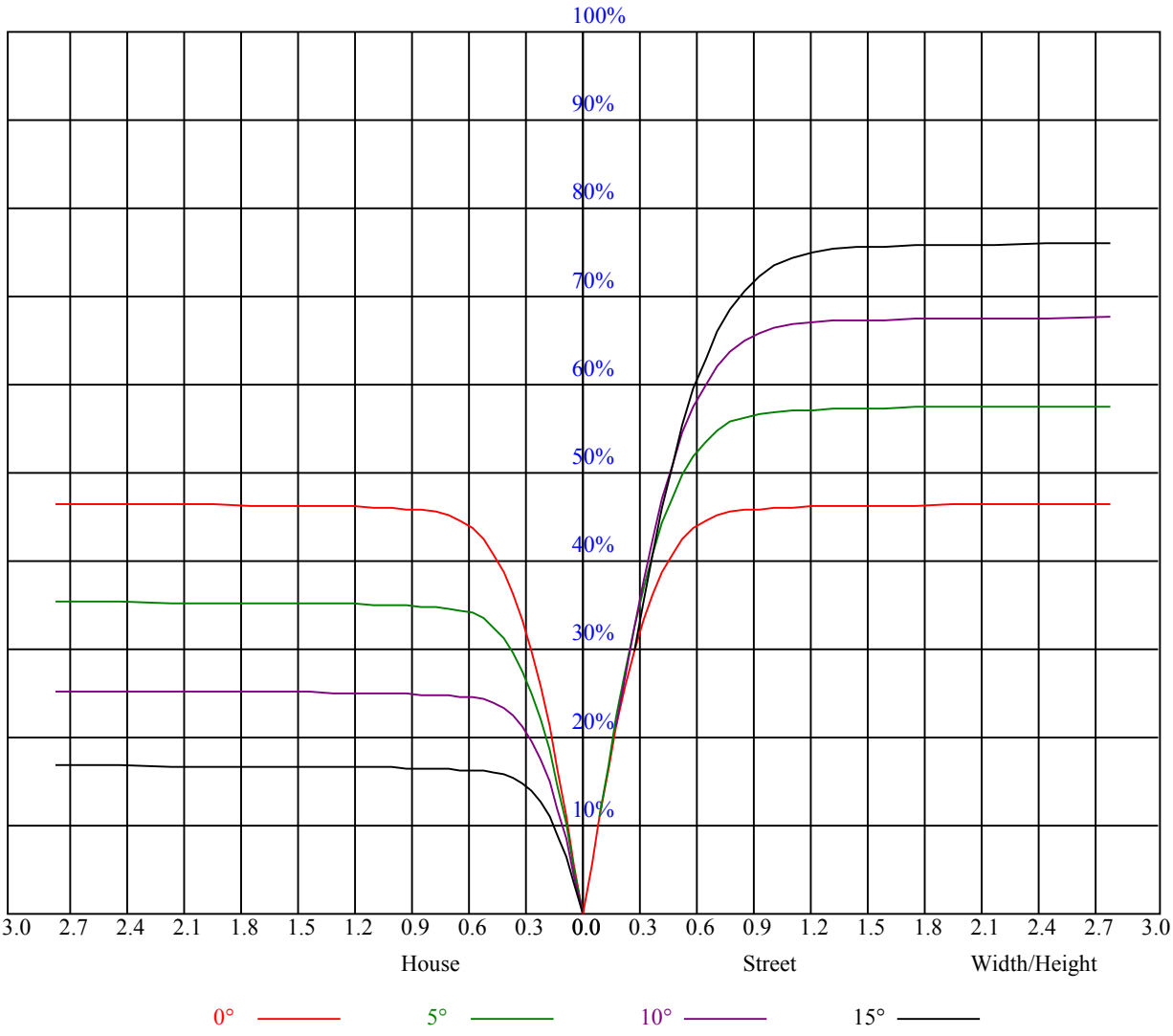
# Utilization factor table for indoor luminaire



| 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 | 1.04 | 1.04 | 1.04 | 0.99 | 0.99 | 0.99 | 0.95 | 0.95 | 0.95 | 0.93 |
| 1 | 1.04 | 1.02 | 1.00 | 1.02 | 1.00 | 0.98 | 0.98 | 0.97 | 0.95 | 0.95 | 0.94 | 0.92 | 0.92 | 0.91 | 0.90 | 0.88 |
| 2 | 0.98 | 0.94 | 0.91 | 0.96 | 0.93 | 0.90 | 0.93 | 0.91 | 0.88 | 0.90 | 0.88 | 0.87 | 0.88 | 0.86 | 0.85 | 0.83 |
| 3 | 0.92 | 0.88 | 0.85 | 0.91 | 0.87 | 0.84 | 0.88 | 0.85 | 0.83 | 0.86 | 0.84 | 0.81 | 0.84 | 0.82 | 0.80 | 0.79 |
| 4 | 0.87 | 0.82 | 0.79 | 0.86 | 0.82 | 0.79 | 0.84 | 0.80 | 0.78 | 0.82 | 0.79 | 0.77 | 0.81 | 0.78 | 0.76 | 0.75 |
| 5 | 0.83 | 0.78 | 0.74 | 0.82 | 0.77 | 0.74 | 0.80 | 0.76 | 0.73 | 0.79 | 0.75 | 0.73 | 0.77 | 0.74 | 0.72 | 0.71 |
| 6 | 0.78 | 0.74 | 0.70 | 0.78 | 0.73 | 0.70 | 0.76 | 0.72 | 0.69 | 0.75 | 0.72 | 0.69 | 0.74 | 0.71 | 0.68 | 0.67 |
| 7 | 0.75 | 0.70 | 0.66 | 0.74 | 0.69 | 0.66 | 0.73 | 0.69 | 0.66 | 0.72 | 0.68 | 0.65 | 0.71 | 0.68 | 0.65 | 0.64 |
| 8 | 0.71 | 0.66 | 0.63 | 0.71 | 0.66 | 0.63 | 0.70 | 0.66 | 0.63 | 0.69 | 0.65 | 0.62 | 0.68 | 0.65 | 0.62 | 0.61 |
| 9 | 0.68 | 0.63 | 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 |
| 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

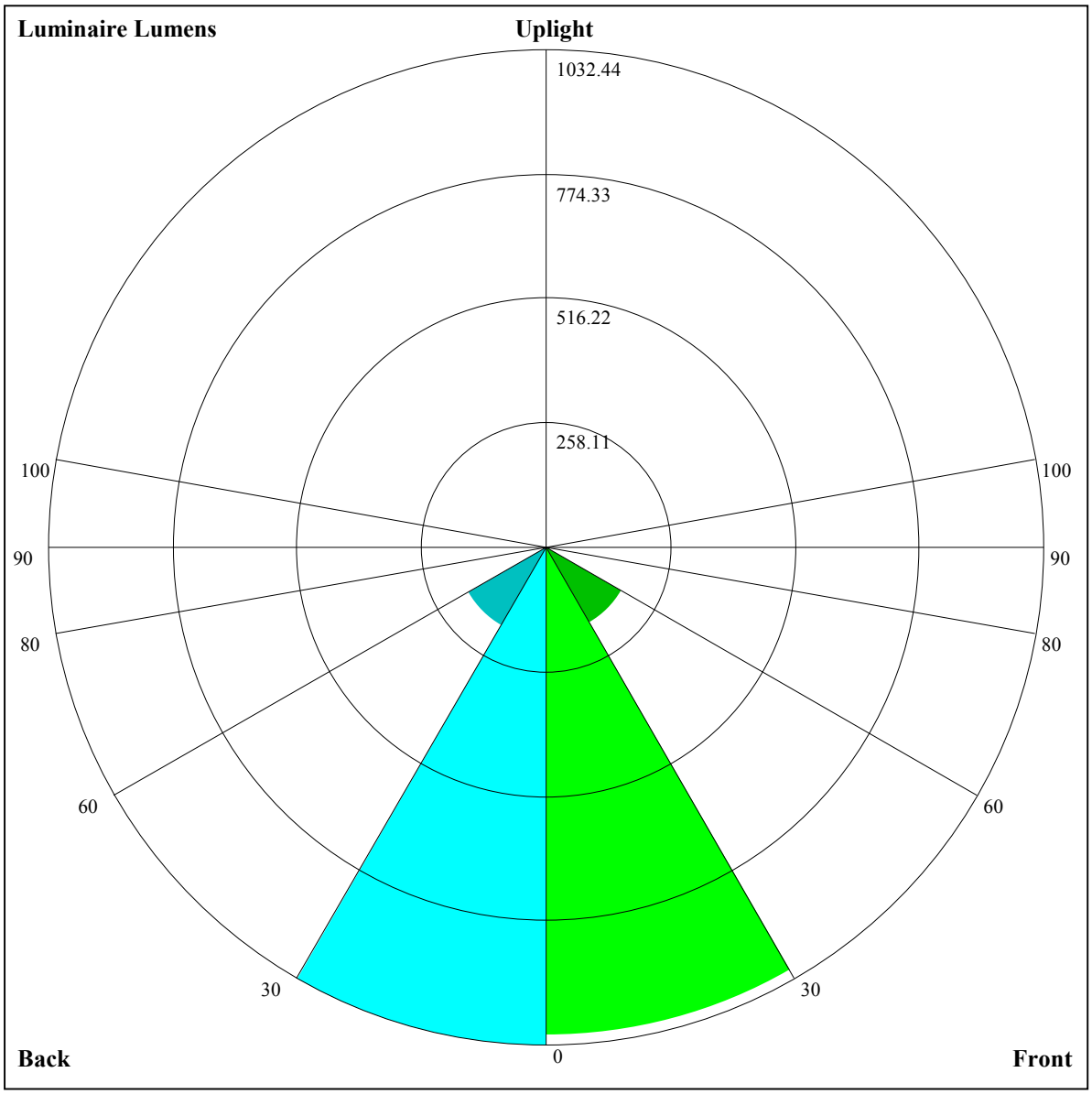





Equipment: GMS 1800
Temperature(°C): 25.0

Date: 2024/9/10
Humidity(%): 60.0%

Operator: NT
Distance(m): 7.25




Luminaire Lumens:
FL=1011.28,FM=179.69,FH=8.54,FVH=1.24
BL=1032.44,BM=186.41,BH=8.74,BVH=1.28
UL=0,UH=0

BUG Rating:B3-U0-G0

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 | 4972.41 | 4929.52 | 4868.76 | 4819.77 | 4733.41 | 4629.18 | 4499.40 | 4341.72 | 4182.92 |
| 45.0 | 4986.92 | 4963.48 | 4910.02 | 4840.90 | 4752.33 | 4637.01 | 4502.71 | 4338.35 | 4177.35 |
| 90.0 | 4933.99 | 4868.23 | 4772.94 | 4707.76 | 4575.15 | 4425.29 | 4262.03 | 4099.35 | 3929.94 |
| 135.0 | 4993.02 | 4964.06 | 4939.56 | 4840.90 | 4748.44 | 4682.69 | 4556.22 | 4414.15 | 4258.14 |
| 180.0 | 4972.41 | 4982.98 | 4992.49 | 4969.63 | 4920.59 | 4854.30 | 4767.37 | 4662.61 | 4540.61 |
| 225.0 | 4996.91 | 5008.63 | 5000.27 | 4980.19 | 4930.05 | 4845.37 | 4782.98 | 4678.22 | 4556.75 |
| 270.0 | 4933.99 | 4978.56 | 5017.56 | 5019.77 | 5020.88 | 4986.34 | 4937.30 | 4869.34 | 4780.77 |
| 315.0 | 4993.02 | 5008.05 | 5007.52 | 4975.20 | 4931.20 | 4863.77 | 4780.77 | 4673.75 | 4556.22 |
| 360.0 | 4972.41 | 4929.52 | 4868.76 | 4819.77 | 4733.41 | 4629.18 | 4499.40 | 4341.72 | 4182.92 |

| C/γ(°) | 9.0 | 10.0 | 11.0 | 12.0 | 13.0 | 14.0 | 15.0 | 16.0 | 17.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 4016.30 | 3848.05 | 3688.15 | 3507.65 | 3338.24 | 3162.74 | 2986.71 | 2804.47 | 2624.55 |
| 45.0 | 4004.63 | 3836.90 | 3655.83 | 3471.96 | 3289.78 | 3110.91 | 2933.78 | 2749.33 | 2575.51 |
| 90.0 | 3751.65 | 3575.04 | 3387.86 | 3209.57 | 3034.59 | 2848.52 | 2671.91 | 2494.14 | 2328.10 |
| 135.0 | 4092.10 | 3925.53 | 3742.19 | 3554.43 | 3375.04 | 3202.84 | 3029.60 | 2842.95 | 2650.15 |
| 180.0 | 4406.31 | 4250.31 | 4091.52 | 3926.05 | 3756.69 | 3575.62 | 3388.39 | 3212.36 | 3096.98 |
| 225.0 | 4416.93 | 4263.71 | 4095.99 | 3922.16 | 3741.08 | 3561.69 | 3377.25 | 3198.43 | 3010.62 |
| 270.0 | 4678.80 | 4553.96 | 4416.35 | 4260.93 | 4101.03 | 3934.99 | 3763.37 | 3582.29 | 3397.85 |
| 315.0 | 4417.46 | 4258.14 | 4093.78 | 3921.58 | 3758.38 | 3583.40 | 3419.61 | 3246.31 | 3068.02 |
| 360.0 | 4016.30 | 3848.05 | 3688.15 | 3507.65 | 3338.24 | 3162.74 | 2986.71 | 2804.47 | 2624.55 |

| C/γ(°) | 18.0 | 19.0 | 20.0 | 21.0 | 22.0 | 23.0 | 24.0 | 25.0 | 26.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 2448.47 | 2283.53 | 2129.78 | 1988.23 | 1844.52 | 1709.65 | 1614.40 | 1496.82 | 1389.28 |
| 45.0 | 2402.21 | 2301.40 | 2142.61 | 1925.84 | 1841.74 | 1703.55 | 1579.87 | 1470.65 | 1361.42 |
| 90.0 | 2166.00 | 2010.52 | 1863.45 | 1721.95 | 1651.72 | 1487.36 | 1373.14 | 1255.56 | 1081.79 |
| 135.0 | 2464.60 | 2278.53 | 2097.45 | 1935.88 | 1781.55 | 1694.09 | 1565.36 | 1388.75 | 1317.43 |
| 180.0 | 2827.92 | 2708.65 | 2514.75 | 2271.28 | 2163.21 | 2001.05 | 1834.48 | 1694.09 | 1566.47 |
| 225.0 | 2823.45 | 2632.91 | 2445.68 | 2262.40 | 2157.06 | 1924.16 | 1835.59 | 1701.87 | 1530.25 |
| 270.0 | 3226.81 | 3083.05 | 2861.34 | 2708.13 | 2535.40 | 2318.64 | 2191.59 | 2024.44 | 1872.91 |
| 315.0 | 2923.74 | 2704.18 | 2563.79 | 2394.43 | 2227.81 | 2065.13 | 1909.70 | 1769.31 | 1637.22 |
| 360.0 | 2448.47 | 2283.53 | 2129.78 | 1988.23 | 1844.52 | 1709.65 | 1614.40 | 1496.82 | 1389.28 |

| C/γ(°) | 27.0 | 28.0 | 29.0 | 30.0 | 31.0 | 32.0 | 33.0 | 34.0 | 35.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 1235.53 | 1089.15 | 1036.22 | 903.08 | 775.93 | 656.51 | 546.65 | 440.68 | 341.76 |
| 45.0 | 1249.46 | 1124.63 | 994.27 | 865.55 | 739.66 | 624.86 | 519.58 | 415.93 | 324.00 |
| 90.0 | 1027.28 | 895.35 | 768.62 | 645.84 | 532.72 | 427.65 | 332.77 | 245.20 | 172.04 |
| 135.0 | 1201.00 | 1080.63 | 960.84 | 839.95 | 719.58 | 606.47 | 499.50 | 398.11 | 304.49 |
| 180.0 | 1441.68 | 1327.99 | 1219.92 | 1107.39 | 991.49 | 872.27 | 754.11 | 642.16 | 534.61 |
| 225.0 | 1460.61 | 1346.97 | 1085.05 | 1085.05 | 1016.45 | 895.09 | 776.24 | 661.60 | 552.69 |
| 270.0 | 1731.93 | 1607.15 | 1497.40 | 1391.54 | 1285.10 | 1162.00 | 1033.85 | 900.13 | 768.04 |
| 315.0 | 1515.22 | 1408.25 | 1257.24 | 1105.60 | 1051.09 | 920.21 | 791.28 | 668.44 | 599.21 |
| 360.0 | 1235.53 | 1089.15 | 1036.22 | 903.08 | 775.93 | 656.51 | 546.65 | 440.68 | 341.76 |

| C/γ(°) | 36.0 | 37.0 | 38.0 | 39.0 | 40.0 | 41.0 | 42.0 | 43.0 | 44.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 257.71 | 185.76 | 129.88 | 106.75 | 79.79 | 73.32 | 64.34 | 54.35 | 51.09 |
| 45.0 | 290.04 | 290.04 | 128.94 | 97.14 | 82.47 | 71.54 | 62.50 | 56.14 | 50.35 |
| 90.0 | 119.00 | 90.57 | 77.74 | 67.28 | 61.76 | 53.25 | 49.88 | 44.99 | 40.37 |
| 135.0 | 304.49 | 147.39 | 120.74 | 84.21 | 71.17 | 65.39 | 55.03 | 51.51 | 45.94 |
| 180.0 | 430.96 | 336.24 | 300.60 | 300.60 | 123.57 | 86.99 | 70.54 | 60.39 | 52.83 |
| 225.0 | 450.57 | 353.54 | 265.70 | 204.26 | 130.78 | 98.19 | 77.90 | 66.75 | 57.98 |
| 270.0 | 646.05 | 538.50 | 433.75 | 336.24 | 317.90 | 317.90 | 137.03 | 96.82 | 77.58 |
| 315.0 | 490.46 | 351.43 | 298.29 | 217.40 | 149.49 | 99.87 | 76.53 | 65.65 | 56.56 |
| 360.0 | 257.71 | 185.76 | 129.88 | 106.75 | 79.79 | 73.32 | 64.34 | 54.35 | 51.09 |

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 | 45.73 | 41.16 | 37.06 | 33.53 | 30.33 | 27.70 | 25.39 | 23.44 | 21.71 |
| 45.0 | 45.47 | 40.89 | 37.00 | 33.64 | 30.70 | 28.12 | 26.02 | 24.07 | 22.50 |
| 90.0 | 36.53 | 33.17 | 30.38 | 27.86 | 25.65 | 23.76 | 22.23 | 20.76 | 19.50 |
| 135.0 | 41.21 | 36.90 | 33.38 | 30.22 | 27.49 | 25.34 | 23.39 | 21.71 | 20.29 |
| 180.0 | 47.10 | 42.31 | 37.90 | 34.06 | 30.70 | 27.60 | 24.97 | 22.71 | 20.92 |
| 225.0 | 51.41 | 45.83 | 40.89 | 36.48 | 32.48 | 29.22 | 26.39 | 23.97 | 21.76 |
| 270.0 | 67.07 | 58.66 | 52.04 | 46.89 | 42.10 | 37.95 | 34.32 | 31.22 | 28.49 |
| 315.0 | 49.78 | 44.63 | 39.89 | 35.80 | 32.06 | 28.75 | 25.97 | 23.71 | 21.81 |
| 360.0 | 45.73 | 41.16 | 37.06 | 33.53 | 30.33 | 27.70 | 25.39 | 23.44 | 21.71 |

| C/γ(°) | 54.0 | 55.0 | 56.0 | 57.0 | 58.0 | 59.0 | 60.0 | 61.0 | 62.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 20.29 | 18.98 | 17.77 | 16.61 | 15.61 | 14.72 | 13.98 | 13.09 | 12.51 |
| 45.0 | 20.97 | 20.34 | 18.55 | 17.35 | 16.77 | 15.72 | 14.88 | 14.03 | 13.30 |
| 90.0 | 18.29 | 17.29 | 16.29 | 15.35 | 14.51 | 13.82 | 13.04 | 12.56 | 11.46 |
| 135.0 | 18.87 | 17.66 | 16.45 | 15.66 | 14.93 | 14.45 | 13.51 | 12.93 | 12.51 |
| 180.0 | 19.24 | 18.45 | 16.77 | 15.72 | 15.19 | 14.09 | 13.67 | 13.14 | 12.62 |
| 225.0 | 19.82 | 18.29 | 17.14 | 16.14 | 15.40 | 14.61 | 14.19 | 13.61 | 13.04 |
| 270.0 | 26.18 | 24.23 | 22.55 | 21.39 | 19.76 | 18.61 | 17.82 | 16.82 | 15.93 |
| 315.0 | 20.18 | 18.87 | 17.87 | 16.77 | 15.77 | 14.72 | 13.82 | 13.14 | 12.51 |
| 360.0 | 20.29 | 18.98 | 17.77 | 16.61 | 15.61 | 14.72 | 13.98 | 13.09 | 12.51 |

| C/γ(°) | 63.0 | 64.0 | 65.0 | 66.0 | 67.0 | 68.0 | 69.0 | 70.0 | 71.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 11.77 | 10.99 | 10.41 | 9.72 | 9.04 | 8.52 | 7.99 | 7.46 | 6.99 |
| 45.0 | 12.46 | 11.67 | 10.83 | 10.14 | 9.41 | 8.62 | 7.94 | 7.46 | 6.99 |
| 90.0 | 11.04 | 10.30 | 9.57 | 8.83 | 8.20 | 7.62 | 7.15 | 6.73 | 6.25 |
| 135.0 | 11.51 | 11.14 | 10.41 | 9.78 | 9.25 | 8.57 | 7.94 | 7.57 | 7.04 |
| 180.0 | 12.14 | 11.56 | 11.14 | 10.67 | 10.20 | 9.62 | 9.04 | 8.52 | 7.99 |
| 225.0 | 12.72 | 12.25 | 11.77 | 11.41 | 10.99 | 10.30 | 9.46 | 8.73 | 8.09 |
| 270.0 | 15.09 | 14.35 | 13.61 | 12.93 | 12.19 | 11.46 | 10.67 | 9.93 | 9.30 |
| 315.0 | 11.93 | 11.30 | 10.78 | 10.25 | 9.62 | 8.99 | 8.57 | 8.09 | 7.62 |
| 360.0 | 11.77 | 10.99 | 10.41 | 9.72 | 9.04 | 8.52 | 7.99 | 7.46 | 6.99 |

| C/γ(°) | 72.0 | 73.0 | 74.0 | 75.0 | 76.0 | 77.0 | 78.0 | 79.0 | 80.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 6.57 | 6.15 | 5.83 | 5.31 | 4.99 | 4.63 | 4.26 | 3.84 | 3.36 |
| 45.0 | 6.57 | 6.10 | 5.73 | 5.31 | 5.05 | 4.68 | 4.10 | 3.84 | 3.42 |
| 90.0 | 5.83 | 5.52 | 5.10 | 4.68 | 4.26 | 3.94 | 3.57 | 3.10 | 2.79 |
| 135.0 | 6.62 | 6.20 | 5.83 | 5.41 | 4.99 | 4.63 | 4.26 | 3.84 | 3.42 |
| 180.0 | 7.52 | 7.10 | 6.62 | 6.15 | 5.78 | 5.47 | 4.99 | 4.68 | 4.21 |
| 225.0 | 7.62 | 7.04 | 6.62 | 6.15 | 5.78 | 5.31 | 4.89 | 4.52 | 4.15 |
| 270.0 | 8.57 | 7.88 | 7.41 | 6.94 | 6.52 | 6.04 | 5.73 | 5.26 | 4.84 |
| 315.0 | 7.25 | 6.83 | 6.52 | 6.25 | 5.73 | 5.47 | 5.10 | 4.57 | 4.36 |
| 360.0 | 6.57 | 6.15 | 5.83 | 5.31 | 4.99 | 4.63 | 4.26 | 3.84 | 3.36 |

| C/γ(°) | 81.0 | 82.0 | 83.0 | 84.0 | 85.0 | 86.0 | 87.0 | 88.0 | 89.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 3.10 | 2.89 | 2.47 | 2.21 | 2.00 | 1.73 | 1.52 | 1.31 | 1.10 |
| 45.0 | 3.10 | 2.63 | 2.31 | 2.00 | 1.79 | 1.42 | 1.16 | 1.00 | 1.00 |
| 90.0 | 2.52 | 2.26 | 1.94 | 1.68 | 1.52 | 1.31 | 1.05 | 1.00 | 1.00 |
| 135.0 | 3.15 | 2.84 | 2.47 | 2.26 | 1.94 | 1.79 | 1.52 | 1.16 | 1.16 |
| 180.0 | 3.84 | 3.42 | 3.10 | 2.79 | 2.37 | 2.16 | 1.94 | 1.68 | 1.42 |
| 225.0 | 3.78 | 3.42 | 3.00 | 2.63 | 2.31 | 2.10 | 1.84 | 1.52 | 1.37 |
| 270.0 | 4.63 | 4.10 | 3.73 | 3.36 | 2.94 | 2.63 | 2.26 | 2.00 | 1.73 |
| 315.0 | 3.94 | 3.63 | 3.26 | 3.00 | 2.63 | 2.31 | 2.05 | 1.79 | 1.52 |
| 360.0 | 3.10 | 2.89 | 2.47 | 2.21 | 2.00 | 1.73 | 1.52 | 1.31 | 1.10 |

Intensity data(cd)

| C/γ(°) | 90.0 |
|---|---|
| 0.0 | 0.95 |
| 45.0 | 1.00 |
| 90.0 | 1.05 |
| 135.0 | 1.16 |
| 180.0 | 1.16 |
| 225.0 | 1.21 |
| 270.0 | 1.42 |
| 315.0 | 1.42 |
| 360.0 | 0.95 |