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

NT

Client:
LumCAT: 2-2688-L
Luminaire: 92.70.412.00
Report No: 2024322-B022
Ballast type: AC

| | |
|---|---|
| Test No: 2024322-C022 | Voltage(V): 34.760 |
| LampCAT: Fortimo_SLM_C_1208 | Current(A): 0.577 |
| Lamp flux(lm): 3486.0 | Power (W): 20.056 |
| Number of Lamps: 1 | PF: 0.000 |
| Length(mm): 0 | Width(mm): 0 |
| Phm Type: C | Height(mm): 0 |

## Photometric Results

Lumens(lm): 2858.02, Efficiency(%): 81.99% , Luminous Efficacy(lm/W): 142.50
Central intensity(cd): 7011.347, Maximum intensity(cd): 7011.347
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=35.0
[C90/270]Total=35.0
Field angle(10%Imax): [C0/180]Total=60.8
[C90/270]Total=60.8
Maximum s/h(1/2): C0_180=0.58 C90_270=0.58
Maximum s/h(1/4): C0_180=0.57 C90_270=0.57
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 81.99%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.768%

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 0.0 | 7011.347 | 0.000 | 0 | 0.00% | 0.00% |
| 1.0 | 7005.494 | 6.707 | 6.707 | 0.19% | 0.23% |
| 2.0 | 6983.841 | 20.079 | 26.786 | 0.58% | 0.94% |
| 3.0 | 6948.142 | 33.321 | 60.106 | 0.96% | 2.10% |
| 4.0 | 6893.863 | 46.334 | 106.44 | 1.33% | 3.72% |
| 5.0 | 6804.177 | 58.928 | 165.368 | 1.69% | 5.79% |
| 6.0 | 6681.646 | 70.872 | 236.24 | 2.03% | 8.27% |
| 7.0 | 6527.585 | 81.989 | 318.229 | 2.35% | 11.13% |
| 8.0 | 6326.926 | 91.997 | 410.227 | 2.64% | 14.35% |
| 9.0 | 6104.467 | 100.750 | 510.976 | 2.89% | 17.88% |
| 10.0 | 5853.260 | 108.213 | 619.189 | 3.10% | 21.66% |
| 11.0 | 5578.935 | 114.231 | 733.42 | 3.28% | 25.66% |
| 12.0 | 5278.788 | 118.690 | 852.111 | 3.40% | 29.81% |
| 13.0 | 4960.791 | 121.518 | 973.629 | 3.49% | 34.07% |
| 14.0 | 4640.600 | 122.897 | 1096.526 | 3.53% | 38.37% |
| 15.0 | 4305.339 | 122.814 | 1219.34 | 3.52% | 42.66% |
| 16.0 | 3968.689 | 121.238 | 1340.577 | 3.48% | 46.91% |
| 17.0 | 3660.348 | 118.805 | 1459.382 | 3.41% | 51.06% |
| 18.0 | 3339.791 | 115.417 | 1574.799 | 3.31% | 55.10% |
| 19.0 | 3030.792 | 110.835 | 1685.634 | 3.18% | 58.98% |
| 20.0 | 2750.250 | 105.809 | 1791.443 | 3.04% | 62.68% |
| 21.0 | 2479.437 | 100.421 | 1891.864 | 2.88% | 66.19% |
| 22.0 | 2209.795 | 94.232 | 1986.096 | 2.70% | 69.49% |
| 23.0 | 1989.165 | 88.106 | 2074.202 | 2.53% | 72.57% |
| 24.0 | 1774.314 | 82.283 | 2156.485 | 2.36% | 75.45% |
| 25.0 | 1585.053 | 76.385 | 2232.869 | 2.19% | 78.13% |
| 26.0 | 1343.150 | 69.121 | 2301.99 | 1.98% | 80.54% |
| 27.0 | 1212.462 | 62.524 | 2364.514 | 1.79% | 82.73% |
| 28.0 | 1077.919 | 57.988 | 2422.501 | 1.66% | 84.76% |
| 29.0 | 907.486 | 51.944 | 2474.445 | 1.49% | 86.58% |
| 30.0 | 761.722 | 45.068 | 2519.513 | 1.29% | 88.16% |
| 31.0 | 622.453 | 38.520 | 2558.033 | 1.10% | 89.50% |
| 32.0 | 494.383 | 31.996 | 2590.029 | 0.92% | 90.62% |
| 33.0 | 373.052 | 25.555 | 2615.584 | 0.73% | 91.52% |
| 34.0 | 295.136 | 20.221 | 2635.805 | 0.58% | 92.22% |
| 35.0 | 247.938 | 16.866 | 2652.671 | 0.48% | 92.81% |
| 36.0 | 180.059 | 13.628 | 2666.299 | 0.39% | 93.29% |
| 37.0 | 148.640 | 10.720 | 2677.019 | 0.31% | 93.67% |

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 38.0 | 129.423 | 9.281 | 2686.3 | 0.27% | 93.99% |
| 39.0 | 117.235 | 8.419 | 2694.719 | 0.24% | 94.29% |
| 40.0 | 107.264 | 7.830 | 2702.549 | 0.22% | 94.56% |
| 41.0 | 97.850 | 7.304 | 2709.853 | 0.21% | 94.82% |
| 42.0 | 90.051 | 6.827 | 2716.68 | 0.20% | 95.05% |
| 43.0 | 82.502 | 6.392 | 2723.072 | 0.18% | 95.28% |
| 44.0 | 76.379 | 5.997 | 2729.068 | 0.17% | 95.49% |
| 45.0 | 70.622 | 5.649 | 2734.718 | 0.16% | 95.69% |
| 46.0 | 65.531 | 5.325 | 2740.042 | 0.15% | 95.87% |
| 47.0 | 61.375 | 5.047 | 2745.09 | 0.14% | 96.05% |
| 48.0 | 57.345 | 4.799 | 2749.889 | 0.14% | 96.22% |
| 49.0 | 53.855 | 4.566 | 2754.456 | 0.13% | 96.38% |
| 50.0 | 50.885 | 4.367 | 2758.823 | 0.13% | 96.53% |
| 51.0 | 48.142 | 4.190 | 2763.012 | 0.12% | 96.68% |
| 52.0 | 45.560 | 4.021 | 2767.033 | 0.12% | 96.82% |
| 53.0 | 43.343 | 3.867 | 2770.9 | 0.11% | 96.95% |
| 54.0 | 41.163 | 3.725 | 2774.625 | 0.11% | 97.08% |
| 55.0 | 39.108 | 3.583 | 2778.208 | 0.10% | 97.21% |
| 56.0 | 37.272 | 3.451 | 2781.66 | 0.10% | 97.33% |
| 57.0 | 35.530 | 3.329 | 2784.988 | 0.10% | 97.44% |
| 58.0 | 33.746 | 3.204 | 2788.192 | 0.09% | 97.56% |
| 59.0 | 32.180 | 3.082 | 2791.274 | 0.09% | 97.66% |
| 60.0 | 30.629 | 2.967 | 2794.241 | 0.09% | 97.77% |
| 61.0 | 29.173 | 2.854 | 2797.095 | 0.08% | 97.87% |
| 62.0 | 27.813 | 2.746 | 2799.841 | 0.08% | 97.96% |
| 63.0 | 26.789 | 2.656 | 2802.497 | 0.08% | 98.06% |
| 64.0 | 25.838 | 2.582 | 2805.079 | 0.07% | 98.15% |
| 65.0 | 24.989 | 2.515 | 2807.594 | 0.07% | 98.24% |
| 66.0 | 24.287 | 2.459 | 2810.053 | 0.07% | 98.32% |
| 67.0 | 23.965 | 2.426 | 2812.479 | 0.07% | 98.41% |
| 68.0 | 23.650 | 2.412 | 2814.891 | 0.07% | 98.49% |
| 69.0 | 23.716 | 2.416 | 2817.308 | 0.07% | 98.58% |
| 70.0 | 23.899 | 2.445 | 2819.753 | 0.07% | 98.66% |
| 71.0 | 24.075 | 2.480 | 2822.233 | 0.07% | 98.75% |
| 72.0 | 23.877 | 2.493 | 2824.726 | 0.07% | 98.84% |
| 73.0 | 23.489 | 2.477 | 2827.203 | 0.07% | 98.92% |
| 74.0 | 23.175 | 2.453 | 2829.656 | 0.07% | 99.01% |
| 75.0 | 22.751 | 2.427 | 2832.083 | 0.07% | 99.09% |

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 76.0 | 22.034 | 2.377 | 2834.46 | 0.07% | 99.18% |
| 77.0 | 21.273 | 2.309 | 2836.769 | 0.07% | 99.26% |
| 78.0 | 20.380 | 2.230 | 2838.999 | 0.06% | 99.33% |
| 79.0 | 18.866 | 2.109 | 2841.107 | 0.06% | 99.41% |
| 80.0 | 17.111 | 1.940 | 2843.047 | 0.06% | 99.48% |
| 81.0 | 15.786 | 1.779 | 2844.826 | 0.05% | 99.54% |
| 82.0 | 14.945 | 1.667 | 2846.493 | 0.05% | 99.60% |
| 83.0 | 14.360 | 1.593 | 2848.086 | 0.05% | 99.65% |
| 84.0 | 13.994 | 1.545 | 2849.63 | 0.04% | 99.71% |
| 85.0 | 13.533 | 1.502 | 2851.133 | 0.04% | 99.76% |
| 86.0 | 12.977 | 1.449 | 2852.582 | 0.04% | 99.81% |
| 87.0 | 12.560 | 1.398 | 2853.979 | 0.04% | 99.86% |
| 88.0 | 12.334 | 1.364 | 2855.343 | 0.04% | 99.91% |
| 89.0 | 12.165 | 1.343 | 2856.686 | 0.04% | 99.95% |
| 90.0 | 12.173 | 1.334 | 2858.02 | 0.04% | 100.00% |

## Zonal flux distribution table



ZONAL LUMEN SUMMARY

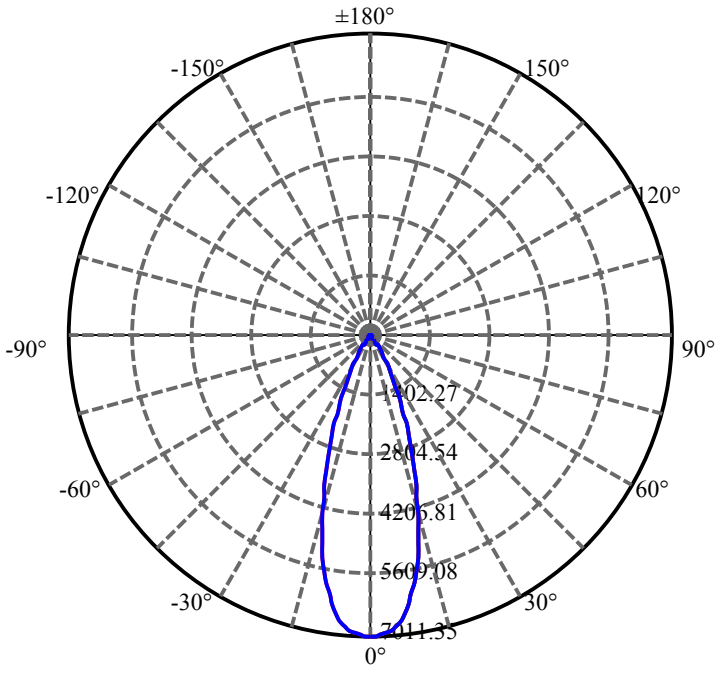
| Zone | Lumens | %Lamp | %Fixt |
|---|---|---|---|
| 0-30 | 2519.51 | 72.28% | 88.16% |
| 0-40 | 2702.55 | 77.53% | 94.56% |
| 0-60 | 2794.24 | 80.16% | 97.77% |
| 0-90 | 2856.69 | 81.95% | 99.95% |
| 0-120 | 2856.69 | 81.95% | 99.95% |
| 0-180 | 2858.02 | 81.99% | 100.00% |
| 60-90 | 62.44 | 1.79% | 2.18% |
| 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% |
| 0-25.77 | 2286.42 | 65.59% | 80.00% |

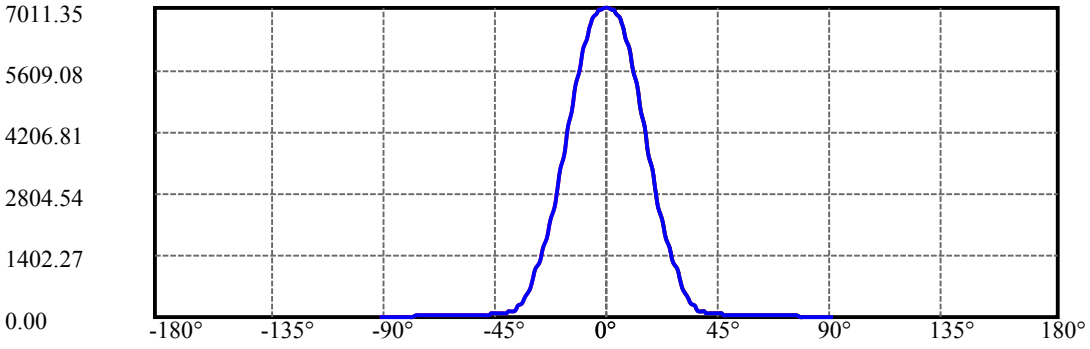
ZONAL LUMEN SUMMARY

| | |
|---|---|
| 0-10 | 619.19 |
| 10-20 | 1172.25 |
| 20-30 | 728.07 |
| 30-40 | 183.04 |
| 40-50 | 56.27 |
| 50-60 | 35.42 |
| 60-70 | 25.51 |
| 70-80 | 23.29 |
| 80-90 | 13.64 |
| 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:

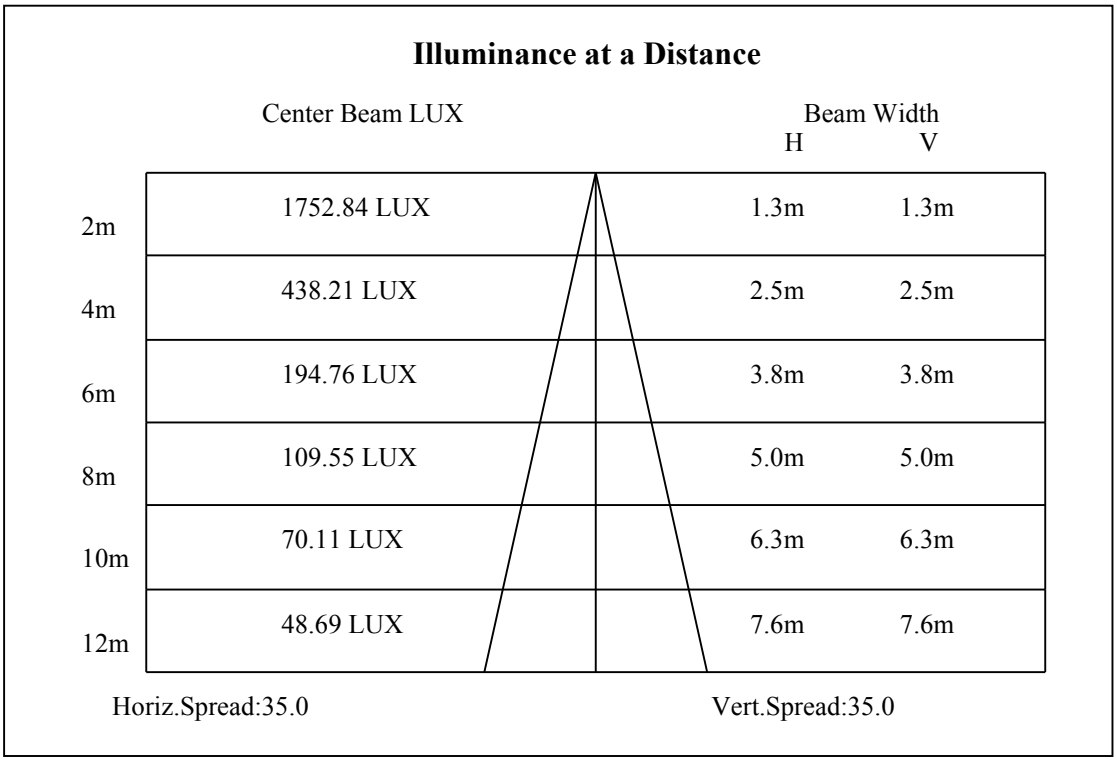
C90/C270:

Field angle(10%Imax):C0/180Left:30.4 Right:30.4
:C90/270Left:30.4 Right:30.4

Beam Angle(50%Imax):C0/180Left:17.5 Right:17.5
:C90/270Left:17.5 Right:17.5

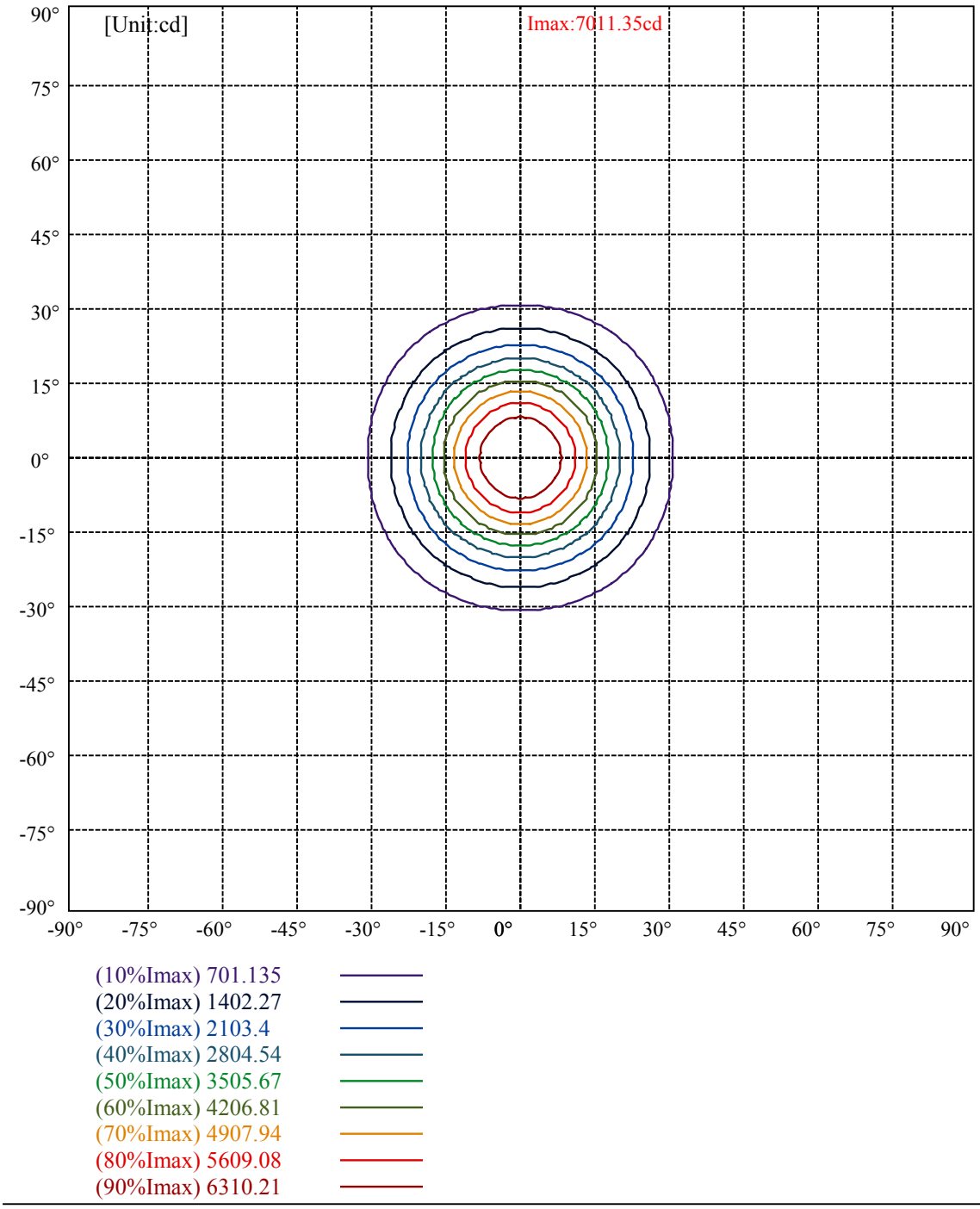
Lux distance Curve





ISO-Intensity(V-H)






(10%Imax) 701.135
(20%Imax) 1402.27
(30%Imax) 2103.4
(40%Imax) 2804.54
(50%Imax) 3505.67
(60%Imax) 4206.81
(70%Imax) 4907.94
(80%Imax) 5609.08
(90%Imax) 6310.21

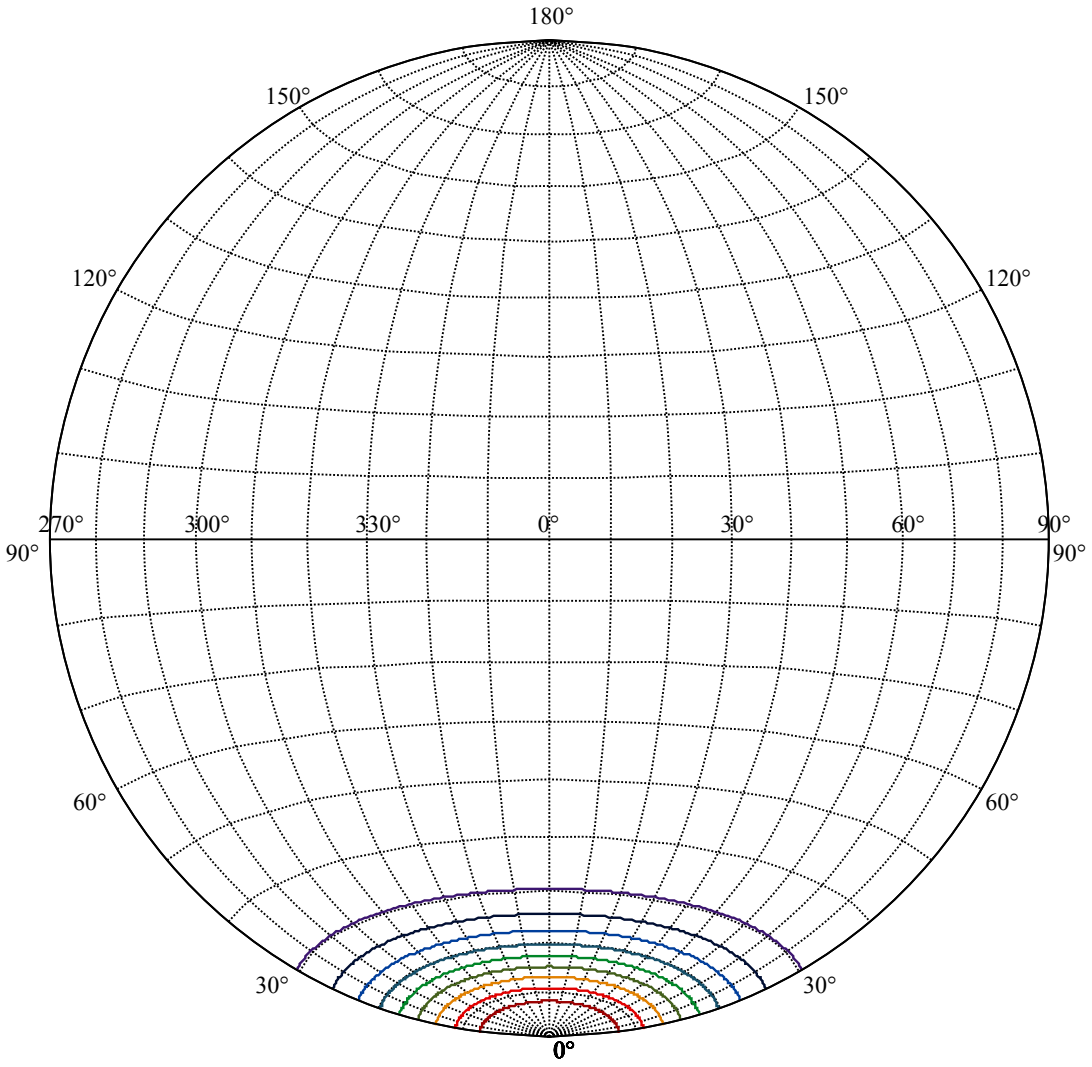
Equipment: GMS1980
Temperature(°C): 25.0

Date: 2024/3/22
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.65

## ISO candela diagram on circular web






House [Unit:cd] Road

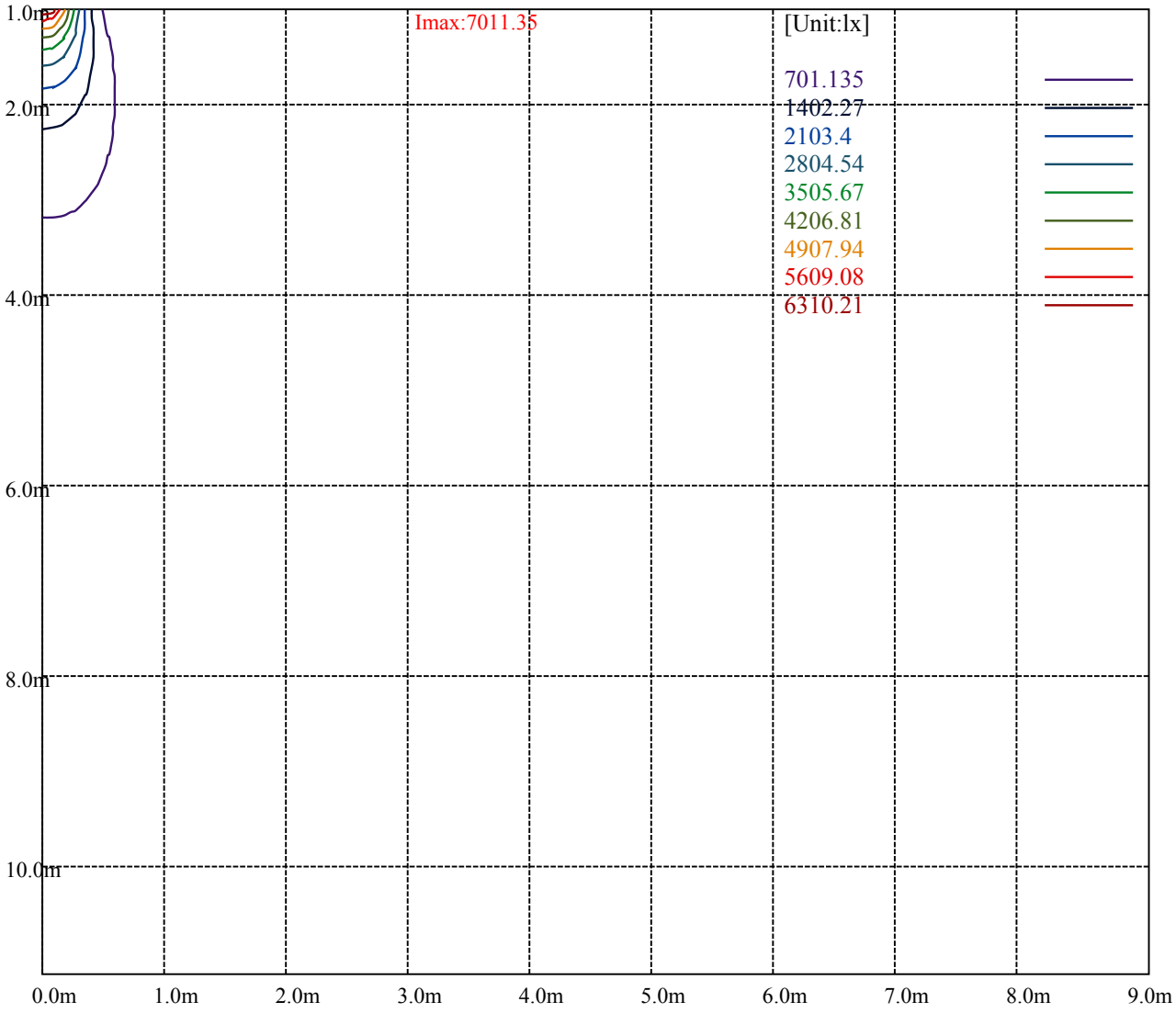
Imax:7011.35

(10%Imax) 701.135
(20%Imax) 1402.27
(30%Imax) 2103.4
(40%Imax) 2804.54
(50%Imax) 3505.67
(60%Imax) 4206.81
(70%Imax) 4907.94
(80%Imax) 5609.08
(90%Imax) 6310.21

| | | |
|---|---|---|
| Equipment: GMS1980 | Date: 2024/3/22 | Operator: NT07 |
| Temperature(°C): 25.0 | Humidity(%): 60.0% | Distance(m): 7.65 |

Space ISO Lux diagram






Equipment: GMS1980
Temperature(°C): 25.0

Date: 2024/3/22
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.65

NT 2-2688-L

## Luminance Limitting Curve(no luminous side)



Luminance Table

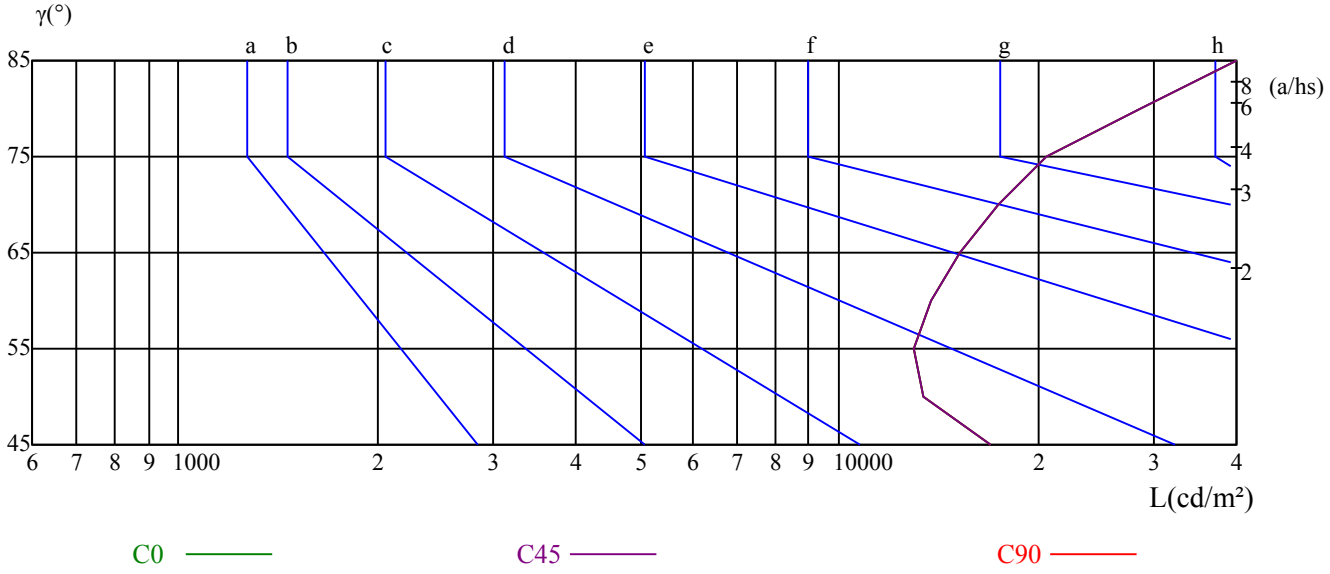
| γ | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 |
|---|---|---|---|---|---|---|---|---|---|
| C0 | 16916 | 13424 | 12973 | 13807 | 15255 | 17397 | 20571 | 28543 | 54228 |
| C45 | 16916 | 13424 | 12973 | 13807 | 15255 | 17397 | 20571 | 28543 | 54228 |
| C90 | 16916 | 13424 | 12973 | 13807 | 15255 | 17397 | 20571 | 28543 | 54228 |

| L(Hor)(65) | L(Ver)(65) | L45(65) | L(Hor)(75) | L(Ver)(75) | L45(75) | L(Hor)(85) | L(Ver)(85) | L45(85) |
|---|---|---|---|---|---|---|---|---|
| 15255 | 15255 | 15255 | 20571 | 20571 | 20571 | 54228 | 54228 | 54228 |

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: GMS1980
Temperature(°C): 25.0

Date: 2024/3/22
Humidity(%): 60.0%

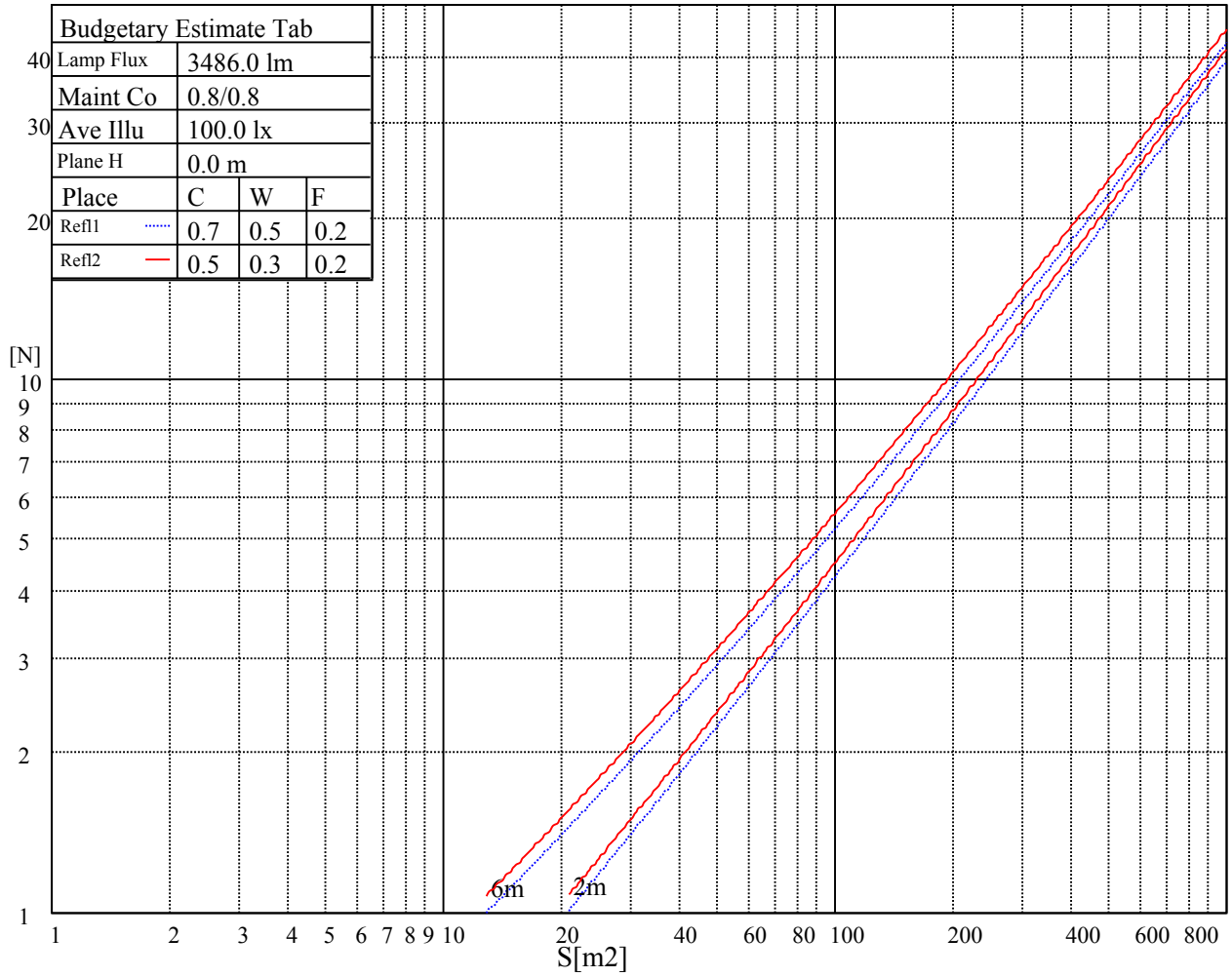
Operator: NT07
Distance(m): 7.65

| 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 X Y | Viewed crosswise | | | | | Viewed endwise | | | | |
| 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 |
| 2H 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 |
| 2H 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 |
| 2H 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 |
| 2H 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 |
| 2H 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 |
| 4H 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 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 |
| 4H 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 |
| 4H 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 |
| 4H 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 |
| 8H 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 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 |
| 8H 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 |
| 12H 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 |
| 12H 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: 2024/3/22 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.65

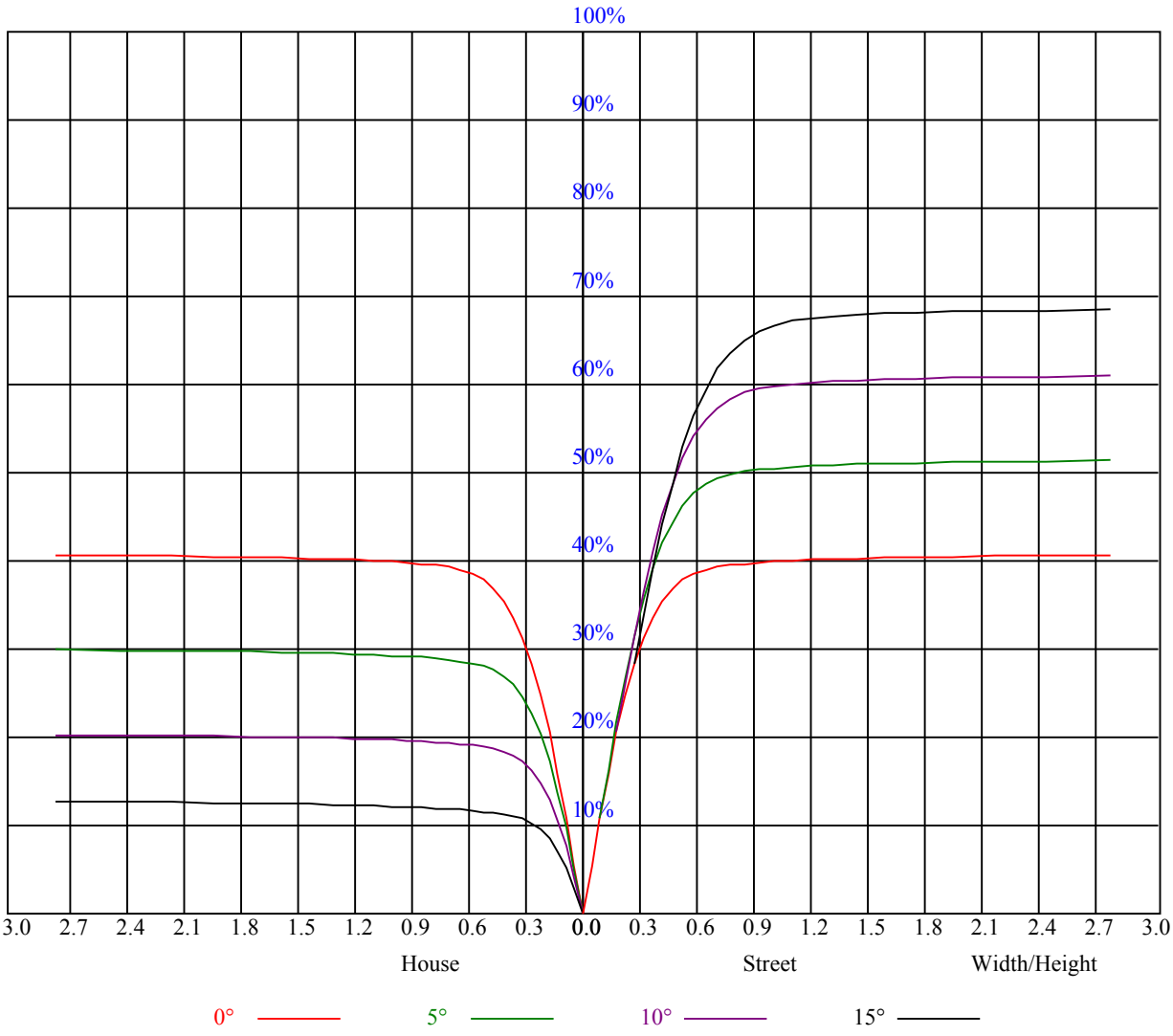
Utilization factor table for indoor luminaire



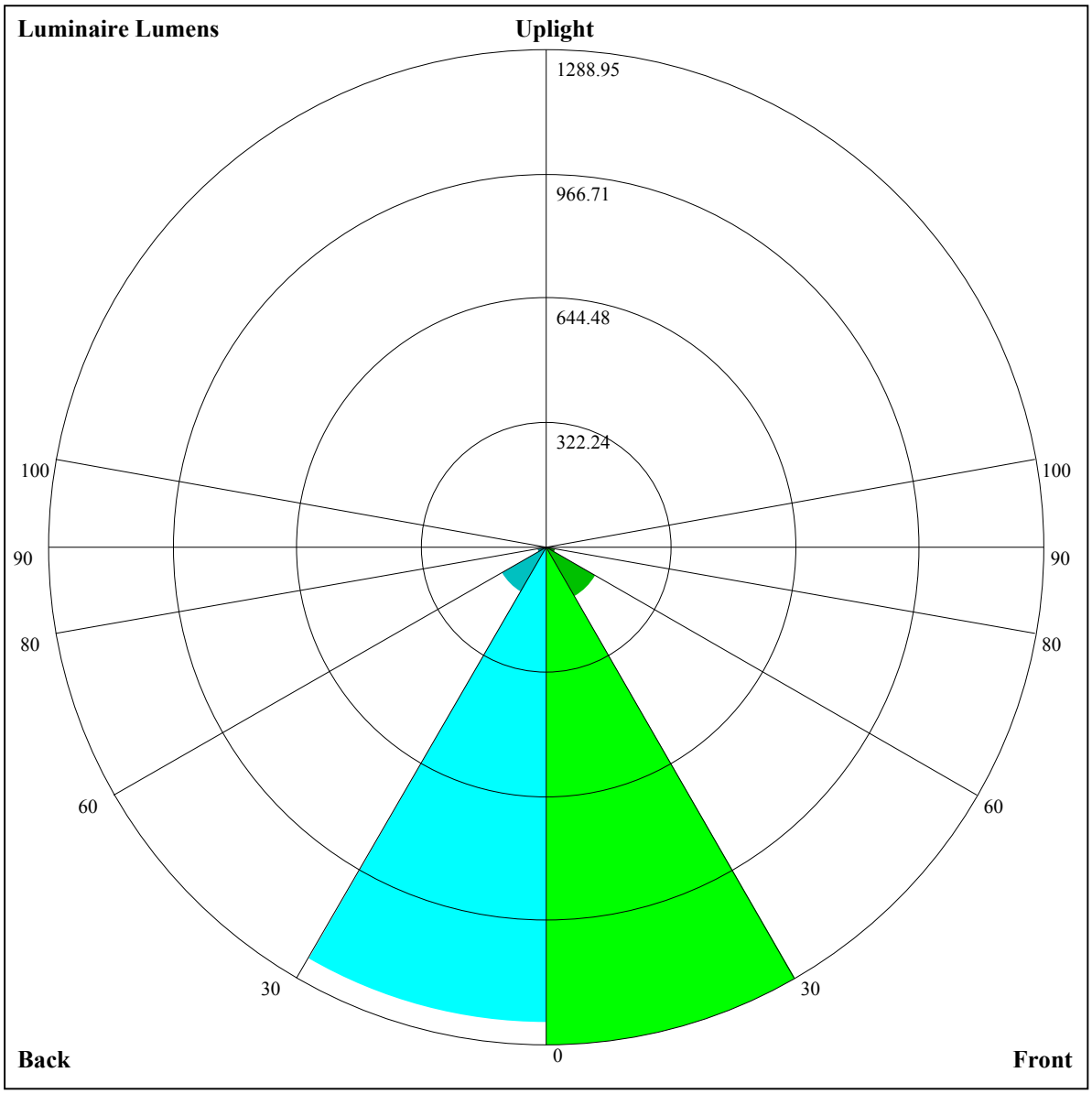
| RHOCC | 80 | | | 70 | | | 50 | | | 30 | | | 10 | | | 0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RHOW | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 0 |
| RCR | COEFFCIENTS OF UTILIZATION RHOFC=20 CU | | | | | | | | | | | | | | | |
| 0 | 0.98 | 0.98 | 0.98 | 0.95 | 0.95 | 0.95 | 0.91 | 0.91 | 0.91 | 0.87 | 0.87 | 0.87 | 0.84 | 0.84 | 0.84 | 0.82 |
| 1 | 0.91 | 0.89 | 0.88 | 0.90 | 0.88 | 0.86 | 0.86 | 0.85 | 0.84 | 0.83 | 0.82 | 0.81 | 0.80 | 0.80 | 0.79 | 0.77 |
| 2 | 0.86 | 0.83 | 0.81 | 0.85 | 0.82 | 0.80 | 0.82 | 0.80 | 0.78 | 0.80 | 0.78 | 0.76 | 0.77 | 0.76 | 0.75 | 0.73 |
| 3 | 0.81 | 0.78 | 0.75 | 0.80 | 0.77 | 0.74 | 0.78 | 0.75 | 0.73 | 0.76 | 0.74 | 0.72 | 0.74 | 0.73 | 0.71 | 0.70 |
| 4 | 0.77 | 0.73 | 0.70 | 0.76 | 0.73 | 0.70 | 0.75 | 0.72 | 0.69 | 0.73 | 0.70 | 0.68 | 0.72 | 0.69 | 0.68 | 0.66 |
| 5 | 0.74 | 0.70 | 0.67 | 0.73 | 0.69 | 0.66 | 0.71 | 0.68 | 0.66 | 0.70 | 0.67 | 0.65 | 0.69 | 0.67 | 0.65 | 0.63 |
| 6 | 0.70 | 0.66 | 0.63 | 0.70 | 0.66 | 0.63 | 0.68 | 0.65 | 0.63 | 0.67 | 0.64 | 0.62 | 0.66 | 0.64 | 0.62 | 0.61 |
| 7 | 0.67 | 0.63 | 0.60 | 0.67 | 0.63 | 0.60 | 0.66 | 0.62 | 0.60 | 0.65 | 0.62 | 0.59 | 0.64 | 0.61 | 0.59 | 0.58 |
| 8 | 0.64 | 0.60 | 0.58 | 0.64 | 0.60 | 0.57 | 0.63 | 0.60 | 0.57 | 0.62 | 0.59 | 0.57 | 0.62 | 0.59 | 0.57 | 0.56 |
| 9 | 0.62 | 0.58 | 0.55 | 0.62 | 0.58 | 0.55 | 0.61 | 0.57 | 0.55 | 0.60 | 0.57 | 0.55 | 0.60 | 0.57 | 0.55 | 0.54 |
| 10 | 0.60 | 0.56 | 0.53 | 0.59 | 0.56 | 0.53 | 0.59 | 0.55 | 0.53 | 0.58 | 0.55 | 0.53 | 0.58 | 0.55 | 0.53 | 0.52 |

## Coefficient Utilization Curve






| | | |
|---|---|---|
| Equipment: GMS1980 | Date: 2024/3/22 | Operator: NT07 |
| Temperature(°C): 25.0 | Humidity(%): 60.0% | Distance(m): 7.65 |




Luminaire Lumens:
FL=1288.95,FM=145.77,FH=23.49,FVH=7.57
BL=1231.51,BM=134.79,BH=24.46,BVH=7.49
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 | 7022.76 | 7028.03 | 7012.22 | 6981.21 | 6941.41 | 6856.55 | 6752.38 | 6610.17 | 6436.36 |
| 45.0 | 6999.35 | 7022.76 | 7032.12 | 7022.76 | 6994.67 | 6954.29 | 6894.01 | 6800.96 | 6640.61 |
| 90.0 | 7019.25 | 7020.42 | 7002.28 | 6973.01 | 6928.54 | 6857.73 | 6720.20 | 6573.31 | 6348.58 |
| 135.0 | 7004.03 | 7006.37 | 6997.01 | 6971.26 | 6932.63 | 6853.04 | 6758.82 | 6626.56 | 6408.86 |
| 180.0 | 7022.76 | 7012.22 | 6975.36 | 6934.39 | 6878.79 | 6768.77 | 6636.51 | 6467.97 | 6223.93 |
| 225.0 | 6999.35 | 6964.24 | 6915.08 | 6852.46 | 6734.83 | 6593.20 | 6384.86 | 6184.13 | 5962.92 |
| 270.0 | 7019.25 | 7007.54 | 6980.62 | 6933.80 | 6881.13 | 6806.81 | 6699.71 | 6519.47 | 6346.24 |
| 315.0 | 7004.03 | 6982.38 | 6956.04 | 6916.25 | 6858.90 | 6743.02 | 6606.66 | 6438.12 | 6247.92 |
| 360.0 | 7022.76 | 7028.03 | 7012.22 | 6981.21 | 6941.41 | 6856.55 | 6752.38 | 6610.17 | 6436.36 |

| C/γ(°) | 9.0 | 10.0 | 11.0 | 12.0 | 13.0 | 14.0 | 15.0 | 16.0 | 17.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 6240.90 | 5950.04 | 5685.52 | 5418.07 | 5058.16 | 4762.03 | 4381.05 | 4072.64 | 3768.91 |
| 45.0 | 6479.67 | 6287.72 | 6006.81 | 5752.82 | 5489.47 | 5127.80 | 4819.97 | 4426.12 | 4114.78 |
| 90.0 | 6135.56 | 5892.69 | 5558.53 | 5277.62 | 4976.23 | 4592.90 | 4280.98 | 3969.64 | 3667.08 |
| 135.0 | 6206.37 | 5981.06 | 5734.09 | 5395.25 | 5112.00 | 4812.95 | 4503.95 | 4108.92 | 3801.09 |
| 180.0 | 6005.64 | 5760.43 | 5494.74 | 5148.87 | 4852.16 | 4544.33 | 4237.09 | 3855.52 | 3564.08 |
| 225.0 | 5648.06 | 5377.11 | 5098.54 | 4807.68 | 4427.29 | 4120.04 | 3819.24 | 3526.04 | 3168.47 |
| 270.0 | 6092.84 | 5855.23 | 5592.47 | 5249.53 | 4959.26 | 4655.52 | 4272.20 | 3969.05 | 3676.44 |
| 315.0 | 6026.71 | 5721.80 | 5460.79 | 5180.47 | 4811.78 | 4509.22 | 4128.24 | 3821.58 | 3521.94 |
| 360.0 | 6240.90 | 5950.04 | 5685.52 | 5418.07 | 5058.16 | 4762.03 | 4381.05 | 4072.64 | 3768.91 |

| C/γ(°) | 18.0 | 19.0 | 20.0 | 21.0 | 22.0 | 23.0 | 24.0 | 25.0 | 26.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 3402.56 | 3122.23 | 2850.69 | 2587.92 | 2274.83 | 2051.86 | 1863.41 | 1696.04 | 1358.37 |
| 45.0 | 3809.29 | 3511.99 | 3157.35 | 2886.39 | 2619.53 | 2367.88 | 2082.29 | 1892.09 | 1722.38 |
| 90.0 | 3306.58 | 3032.11 | 2766.42 | 2507.75 | 2196.99 | 1981.05 | 1799.63 | 1597.14 | 1134.93 |
| 135.0 | 3504.97 | 3149.15 | 2877.61 | 2558.08 | 2308.19 | 2076.44 | 1837.08 | 1673.22 | 1506.43 |
| 180.0 | 3274.98 | 2912.72 | 2664.00 | 2346.81 | 2088.73 | 1904.97 | 1732.91 | 1516.96 | 1346.66 |
| 225.0 | 2885.80 | 2621.28 | 2302.33 | 2067.66 | 1871.61 | 1662.10 | 1368.90 | 1162.20 | 1122.46 |
| 270.0 | 3376.81 | 3008.70 | 2756.47 | 2506.58 | 2235.62 | 1980.46 | 1789.09 | 1586.60 | 1415.13 |
| 315.0 | 3157.35 | 2888.14 | 2627.13 | 2374.32 | 2082.87 | 1888.58 | 1721.21 | 1556.17 | 1138.85 |
| 360.0 | 3402.56 | 3122.23 | 2850.69 | 2587.92 | 2274.83 | 2051.86 | 1863.41 | 1696.04 | 1358.37 |

| C/γ(°) | 27.0 | 28.0 | 29.0 | 30.0 | 31.0 | 32.0 | 33.0 | 34.0 | 35.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 1150.67 | 1150.67 | 961.64 | 818.09 | 684.65 | 527.99 | 412.41 | 311.46 | 216.83 |
| 45.0 | 1550.90 | 1333.79 | 1168.17 | 1011.91 | 829.91 | 694.14 | 536.71 | 421.42 | 320.18 |
| 90.0 | 1134.93 | 1056.68 | 907.16 | 766.18 | 601.90 | 481.29 | 372.38 | 278.33 | 206.58 |
| 135.0 | 1332.62 | 1163.49 | 967.44 | 824.06 | 690.04 | 564.80 | 418.49 | 317.25 | 295.01 |
| 180.0 | 1181.63 | 1024.79 | 838.69 | 700.57 | 572.99 | 453.02 | 323.10 | 300.28 | 300.28 |
| 225.0 | 968.78 | 824.06 | 686.35 | 528.58 | 416.91 | 319.18 | 241.11 | 179.90 | 156.84 |
| 270.0 | 1241.32 | 1048.78 | 896.62 | 749.15 | 616.30 | 493.40 | 358.22 | 310.81 | 310.81 |
| 315.0 | 1138.85 | 1021.10 | 833.83 | 695.25 | 566.91 | 421.24 | 321.99 | 241.64 | 176.97 |
| 360.0 | 1150.67 | 1150.67 | 961.64 | 818.09 | 684.65 | 527.99 | 412.41 | 311.46 | 216.83 |

| C/γ(°) | 36.0 | 37.0 | 38.0 | 39.0 | 40.0 | 41.0 | 42.0 | 43.0 | 44.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 173.64 | 152.51 | 138.35 | 123.13 | 113.18 | 103.94 | 95.63 | 86.50 | 80.06 |
| 45.0 | 297.94 | 210.74 | 153.27 | 138.58 | 126.12 | 112.83 | 103.82 | 95.63 | 88.31 |
| 90.0 | 157.78 | 140.22 | 127.11 | 113.18 | 103.88 | 95.57 | 86.44 | 79.94 | 72.86 |
| 135.0 | 204.13 | 142.39 | 125.71 | 114.53 | 104.87 | 94.51 | 87.20 | 80.70 | 74.97 |
| 180.0 | 146.60 | 133.26 | 118.63 | 108.56 | 99.49 | 89.54 | 82.58 | 76.43 | 70.99 |
| 225.0 | 142.39 | 127.05 | 116.64 | 105.05 | 96.68 | 89.13 | 82.40 | 75.20 | 70.11 |
| 270.0 | 165.56 | 144.96 | 132.32 | 121.43 | 109.50 | 100.83 | 93.05 | 84.45 | 78.36 |
| 315.0 | 152.45 | 138.00 | 123.37 | 113.42 | 104.40 | 96.45 | 89.31 | 81.17 | 75.38 |
| 360.0 | 173.64 | 152.51 | 138.35 | 123.13 | 113.18 | 103.94 | 95.63 | 86.50 | 80.06 |

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 | 74.21 | 67.77 | 63.20 | 58.41 | 54.84 | 51.62 | 48.81 | 45.71 | 43.54 |
| 45.0 | 80.12 | 74.27 | 69.17 | 63.56 | 59.52 | 55.07 | 51.85 | 49.10 | 46.64 |
| 90.0 | 67.94 | 63.56 | 59.75 | 55.54 | 52.61 | 49.92 | 47.58 | 44.89 | 42.90 |
| 135.0 | 69.82 | 64.14 | 60.16 | 56.77 | 52.85 | 50.15 | 47.70 | 45.00 | 43.01 |
| 180.0 | 65.25 | 61.27 | 57.88 | 54.78 | 51.32 | 48.87 | 46.64 | 44.13 | 42.14 |
| 225.0 | 65.66 | 61.74 | 57.47 | 54.48 | 51.62 | 49.04 | 46.12 | 44.01 | 41.84 |
| 270.0 | 71.75 | 67.01 | 62.91 | 59.22 | 55.25 | 52.44 | 49.69 | 47.23 | 44.48 |
| 315.0 | 70.23 | 64.49 | 60.45 | 56.01 | 52.85 | 49.98 | 46.76 | 44.42 | 42.19 |
| 360.0 | 74.21 | 67.77 | 63.20 | 58.41 | 54.84 | 51.62 | 48.81 | 45.71 | 43.54 |

| C/γ(°) | 54.0 | 55.0 | 56.0 | 57.0 | 58.0 | 59.0 | 60.0 | 61.0 | 62.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 41.38 | 39.03 | 37.34 | 35.58 | 33.88 | 32.36 | 30.61 | 29.14 | 27.68 |
| 45.0 | 43.83 | 41.79 | 39.97 | 38.22 | 35.99 | 34.24 | 32.77 | 30.90 | 29.38 |
| 90.0 | 41.08 | 38.86 | 37.16 | 35.41 | 33.71 | 31.95 | 30.49 | 28.73 | 27.56 |
| 135.0 | 40.67 | 38.86 | 37.28 | 35.64 | 33.53 | 32.19 | 30.72 | 29.32 | 27.74 |
| 180.0 | 40.32 | 38.33 | 36.69 | 35.00 | 33.18 | 31.89 | 30.55 | 29.32 | 28.03 |
| 225.0 | 39.56 | 37.75 | 35.52 | 33.88 | 32.42 | 30.96 | 29.38 | 28.32 | 27.39 |
| 270.0 | 42.31 | 40.32 | 38.10 | 36.23 | 34.47 | 32.60 | 31.08 | 29.55 | 28.03 |
| 315.0 | 40.15 | 37.92 | 36.11 | 34.29 | 32.77 | 31.25 | 29.44 | 28.09 | 26.69 |
| 360.0 | 41.38 | 39.03 | 37.34 | 35.58 | 33.88 | 32.36 | 30.61 | 29.14 | 27.68 |

| C/γ(°) | 63.0 | 64.0 | 65.0 | 66.0 | 67.0 | 68.0 | 69.0 | 70.0 | 71.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 26.69 | 25.63 | 24.70 | 23.76 | 23.58 | 23.82 | 24.87 | 26.39 | 27.04 |
| 45.0 | 28.09 | 26.86 | 25.75 | 24.52 | 23.76 | 23.47 | 23.41 | 24.35 | 25.93 |
| 90.0 | 26.51 | 25.40 | 24.23 | 23.41 | 22.65 | 21.65 | 21.01 | 20.48 | 19.96 |
| 135.0 | 26.63 | 25.69 | 24.52 | 23.64 | 22.94 | 22.00 | 21.42 | 20.89 | 20.19 |
| 180.0 | 26.98 | 26.04 | 25.28 | 24.29 | 23.64 | 23.23 | 24.17 | 25.52 | 27.21 |
| 225.0 | 26.80 | 26.69 | 27.10 | 28.15 | 30.14 | 31.60 | 32.71 | 32.48 | 32.13 |
| 270.0 | 26.98 | 25.81 | 24.81 | 23.82 | 23.06 | 22.30 | 21.65 | 21.19 | 20.78 |
| 315.0 | 25.63 | 24.58 | 23.53 | 22.71 | 21.95 | 21.13 | 20.48 | 19.90 | 19.37 |
| 360.0 | 26.69 | 25.63 | 24.70 | 23.76 | 23.58 | 23.82 | 24.87 | 26.39 | 27.04 |

| C/γ(°) | 72.0 | 73.0 | 74.0 | 75.0 | 76.0 | 77.0 | 78.0 | 79.0 | 80.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 26.74 | 26.39 | 26.34 | 25.69 | 23.70 | 22.53 | 21.77 | 18.96 | 16.27 |
| 45.0 | 26.86 | 26.45 | 25.69 | 25.52 | 24.93 | 23.76 | 23.17 | 22.59 | 21.24 |
| 90.0 | 19.43 | 19.14 | 18.90 | 18.55 | 18.14 | 17.62 | 17.15 | 16.62 | 16.09 |
| 135.0 | 19.61 | 19.14 | 18.73 | 18.20 | 17.79 | 17.38 | 16.97 | 16.50 | 15.92 |
| 180.0 | 27.68 | 27.92 | 28.44 | 28.27 | 28.03 | 27.10 | 25.63 | 22.77 | 19.61 |
| 225.0 | 31.60 | 30.55 | 29.61 | 28.91 | 27.68 | 26.69 | 24.35 | 20.66 | 15.98 |
| 270.0 | 20.37 | 20.01 | 19.78 | 19.37 | 18.96 | 18.43 | 17.67 | 17.09 | 16.62 |
| 315.0 | 18.73 | 18.32 | 17.91 | 17.50 | 17.03 | 16.68 | 16.33 | 15.74 | 15.16 |
| 360.0 | 26.74 | 26.39 | 26.34 | 25.69 | 23.70 | 22.53 | 21.77 | 18.96 | 16.27 |

| C/γ(°) | 81.0 | 82.0 | 83.0 | 84.0 | 85.0 | 86.0 | 87.0 | 88.0 | 89.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 14.98 | 14.75 | 14.40 | 14.10 | 13.93 | 13.28 | 12.76 | 12.41 | 12.35 |
| 45.0 | 18.55 | 15.98 | 14.46 | 14.16 | 13.81 | 13.69 | 13.05 | 12.64 | 12.29 |
| 90.0 | 15.51 | 14.86 | 14.40 | 13.99 | 13.40 | 12.87 | 12.58 | 12.35 | 12.17 |
| 135.0 | 15.45 | 14.92 | 14.57 | 14.34 | 13.87 | 12.99 | 12.58 | 12.35 | 12.29 |
| 180.0 | 16.27 | 14.86 | 14.46 | 14.10 | 13.34 | 12.70 | 12.29 | 12.23 | 12.06 |
| 225.0 | 14.75 | 14.28 | 13.93 | 13.52 | 12.87 | 12.47 | 12.29 | 12.00 | 12.11 |
| 270.0 | 16.15 | 15.57 | 14.69 | 14.05 | 13.64 | 13.05 | 12.52 | 12.35 | 12.00 |
| 315.0 | 14.63 | 14.34 | 13.99 | 13.69 | 13.40 | 12.76 | 12.41 | 12.35 | 12.06 |
| 360.0 | 14.98 | 14.75 | 14.40 | 14.10 | 13.93 | 13.28 | 12.76 | 12.41 | 12.35 |

Intensity data(cd)



| C/γ(°) | 90.0 |
|---|---|
| 0.0 | 12.00 |
| 45.0 | 12.35 |
| 90.0 | 12.17 |
| 135.0 | 12.23 |
| 180.0 | 12.06 |
| 225.0 | 12.11 |
| 270.0 | 12.23 |
| 315.0 | 12.23 |
| 360.0 | 12.00 |