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## NATA

Client:
LumCAT: 2-2639-L
Luminaire: 92.70.411.00
Report No: 20231016-B017
Ballast type: AC

| | |
|---|---|
| Test No: 20231016-C017 | Voltage(V): 34.370 |
| LampCAT: NICHIA NFCWJ108B-V3 | Current(A): 0.576 |
| Lamp flux(lm): 2574.8 | Power (W): 19.797 |
| Number of Lamps: 1 | PF: 0.000 |
| Length(mm): 0 | Width(mm): 0 |
| Phm Type: C | Height(mm): 0 |

## Photometric Results

Lumens(lm): 2444.53, Efficiency(%): 94.94% , Luminous Efficacy(lm/W): 123.48
Central intensity(cd): 9811.564, Maximum intensity(cd): 9811.564
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=21.2
[C90/270]Total=21.2
Field angle(10%Imax): [C0/180]Total=55.4
[C90/270]Total=55.4
Beam angle of C0 plane : 21.24
Aveage BeamAngle(IEC 61341):21.24
Maximum s/h(1/2): C0_180=0.36 C90_270=0.36
Maximum s/h(1/4): C0_180=0.40 C90_270=0.40
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 94.94%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.117%

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 0.0 | 9811.564 | 0.000 | 0 | 0.00% | 0.00% |
| 1.0 | 9757.317 | 9.363 | 9.363 | 0.36% | 0.38% |
| 2.0 | 9582.884 | 27.759 | 37.122 | 1.08% | 1.52% |
| 3.0 | 9267.784 | 45.085 | 82.207 | 1.75% | 3.36% |
| 4.0 | 8841.631 | 60.618 | 142.825 | 2.35% | 5.84% |
| 5.0 | 8323.798 | 73.845 | 216.67 | 2.87% | 8.86% |
| 6.0 | 7730.130 | 84.368 | 301.037 | 3.28% | 12.31% |
| 7.0 | 7092.595 | 92.004 | 393.042 | 3.57% | 16.08% |
| 8.0 | 6445.512 | 96.890 | 489.931 | 3.76% | 20.04% |
| 9.0 | 5848.454 | 99.636 | 589.567 | 3.87% | 24.12% |
| 10.0 | 5218.045 | 100.148 | 689.715 | 3.89% | 28.21% |
| 11.0 | 4714.535 | 99.247 | 788.962 | 3.85% | 32.27% |
| 12.0 | 4207.911 | 97.535 | 886.497 | 3.79% | 36.26% |
| 13.0 | 3771.794 | 94.699 | 981.196 | 3.68% | 40.14% |
| 14.0 | 3369.028 | 91.402 | 1072.598 | 3.55% | 43.88% |
| 15.0 | 3020.923 | 87.724 | 1160.322 | 3.41% | 47.47% |
| 16.0 | 2709.144 | 83.962 | 1244.283 | 3.26% | 50.90% |
| 17.0 | 2448.082 | 80.312 | 1324.595 | 3.12% | 54.19% |
| 18.0 | 2223.623 | 77.026 | 1401.622 | 2.99% | 57.34% |
| 19.0 | 2016.393 | 73.768 | 1475.389 | 2.87% | 60.35% |
| 20.0 | 1844.520 | 70.665 | 1546.055 | 2.74% | 63.25% |
| 21.0 | 1687.454 | 67.821 | 1613.876 | 2.63% | 66.02% |
| 22.0 | 1557.097 | 65.201 | 1679.076 | 2.53% | 68.69% |
| 23.0 | 1432.344 | 62.727 | 1741.803 | 2.44% | 71.25% |
| 24.0 | 1298.803 | 59.713 | 1801.516 | 2.32% | 73.70% |
| 25.0 | 1192.649 | 56.650 | 1858.166 | 2.20% | 76.01% |
| 26.0 | 1126.425 | 54.742 | 1912.908 | 2.13% | 78.25% |
| 27.0 | 1039.935 | 53.000 | 1965.908 | 2.06% | 80.42% |
| 28.0 | 954.137 | 50.486 | 2016.394 | 1.96% | 82.49% |
| 29.0 | 855.573 | 47.347 | 2063.741 | 1.84% | 84.42% |
| 30.0 | 766.966 | 43.808 | 2107.549 | 1.70% | 86.21% |
| 31.0 | 669.529 | 39.976 | 2147.525 | 1.55% | 87.85% |
| 32.0 | 582.147 | 35.859 | 2183.384 | 1.39% | 89.32% |
| 33.0 | 497.110 | 31.795 | 2215.179 | 1.23% | 90.62% |
| 34.0 | 415.546 | 27.620 | 2242.799 | 1.07% | 91.75% |
| 35.0 | 343.905 | 23.586 | 2266.385 | 0.92% | 92.71% |
| 36.0 | 281.750 | 19.921 | 2286.306 | 0.77% | 93.53% |
| 37.0 | 240.857 | 17.045 | 2303.35 | 0.66% | 94.22% |

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 38.0 | 191.925 | 14.446 | 2317.796 | 0.56% | 94.82% |
| 39.0 | 144.833 | 11.494 | 2329.29 | 0.45% | 95.29% |
| 40.0 | 104.411 | 8.693 | 2337.983 | 0.34% | 95.64% |
| 41.0 | 79.688 | 6.556 | 2344.539 | 0.25% | 95.91% |
| 42.0 | 64.245 | 5.229 | 2349.768 | 0.20% | 96.12% |
| 43.0 | 52.787 | 4.335 | 2354.103 | 0.17% | 96.30% |
| 44.0 | 44.615 | 3.676 | 2357.779 | 0.14% | 96.45% |
| 45.0 | 39.045 | 3.215 | 2360.994 | 0.12% | 96.58% |
| 46.0 | 35.295 | 2.907 | 2363.902 | 0.11% | 96.70% |
| 47.0 | 32.506 | 2.697 | 2366.598 | 0.10% | 96.81% |
| 48.0 | 30.410 | 2.543 | 2369.142 | 0.10% | 96.92% |
| 49.0 | 28.888 | 2.435 | 2371.577 | 0.09% | 97.02% |
| 50.0 | 27.794 | 2.363 | 2373.94 | 0.09% | 97.11% |
| 51.0 | 27.054 | 2.321 | 2376.261 | 0.09% | 97.21% |
| 52.0 | 26.632 | 2.304 | 2378.564 | 0.09% | 97.30% |
| 53.0 | 26.487 | 2.311 | 2380.875 | 0.09% | 97.40% |
| 54.0 | 26.632 | 2.341 | 2383.216 | 0.09% | 97.49% |
| 55.0 | 26.999 | 2.394 | 2385.61 | 0.09% | 97.59% |
| 56.0 | 27.538 | 2.464 | 2388.075 | 0.10% | 97.69% |
| 57.0 | 28.085 | 2.543 | 2390.618 | 0.10% | 97.79% |
| 58.0 | 28.389 | 2.612 | 2393.23 | 0.10% | 97.90% |
| 59.0 | 28.244 | 2.648 | 2395.877 | 0.10% | 98.01% |
| 60.0 | 27.483 | 2.633 | 2398.51 | 0.10% | 98.12% |
| 61.0 | 26.231 | 2.563 | 2401.073 | 0.10% | 98.22% |
| 62.0 | 24.418 | 2.441 | 2403.514 | 0.09% | 98.32% |
| 63.0 | 22.460 | 2.280 | 2405.794 | 0.09% | 98.42% |
| 64.0 | 20.488 | 2.107 | 2407.901 | 0.08% | 98.50% |
| 65.0 | 19.014 | 1.955 | 2409.856 | 0.08% | 98.58% |
| 66.0 | 17.845 | 1.839 | 2411.695 | 0.07% | 98.66% |
| 67.0 | 16.959 | 1.750 | 2413.445 | 0.07% | 98.73% |
| 68.0 | 16.281 | 1.684 | 2415.129 | 0.07% | 98.80% |
| 69.0 | 15.665 | 1.630 | 2416.759 | 0.06% | 98.86% |
| 70.0 | 15.222 | 1.586 | 2418.345 | 0.06% | 98.93% |
| 71.0 | 14.752 | 1.549 | 2419.894 | 0.06% | 98.99% |
| 72.0 | 14.357 | 1.514 | 2421.408 | 0.06% | 99.05% |
| 73.0 | 13.998 | 1.483 | 2422.89 | 0.06% | 99.11% |
| 74.0 | 13.686 | 1.455 | 2424.346 | 0.06% | 99.17% |
| 75.0 | 13.389 | 1.431 | 2425.776 | 0.06% | 99.23% |

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 76.0 | 13.119 | 1.407 | 2427.184 | 0.05% | 99.29% |
| 77.0 | 12.870 | 1.386 | 2428.569 | 0.05% | 99.35% |
| 78.0 | 12.607 | 1.364 | 2429.933 | 0.05% | 99.40% |
| 79.0 | 12.358 | 1.341 | 2431.274 | 0.05% | 99.46% |
| 80.0 | 12.116 | 1.319 | 2432.594 | 0.05% | 99.51% |
| 81.0 | 11.832 | 1.295 | 2433.889 | 0.05% | 99.56% |
| 82.0 | 11.576 | 1.269 | 2435.158 | 0.05% | 99.62% |
| 83.0 | 11.327 | 1.245 | 2436.403 | 0.05% | 99.67% |
| 84.0 | 11.085 | 1.221 | 2437.624 | 0.05% | 99.72% |
| 85.0 | 10.863 | 1.198 | 2438.822 | 0.05% | 99.77% |
| 86.0 | 10.662 | 1.177 | 2439.998 | 0.05% | 99.81% |
| 87.0 | 10.490 | 1.158 | 2441.156 | 0.04% | 99.86% |
| 88.0 | 10.317 | 1.140 | 2442.296 | 0.04% | 99.91% |
| 89.0 | 10.164 | 1.123 | 2443.418 | 0.04% | 99.95% |
| 90.0 | 10.095 | 1.111 | 2444.529 | 0.04% | 100.00% |

## Zonal flux distribution table



ZONAL LUMEN SUMMARY

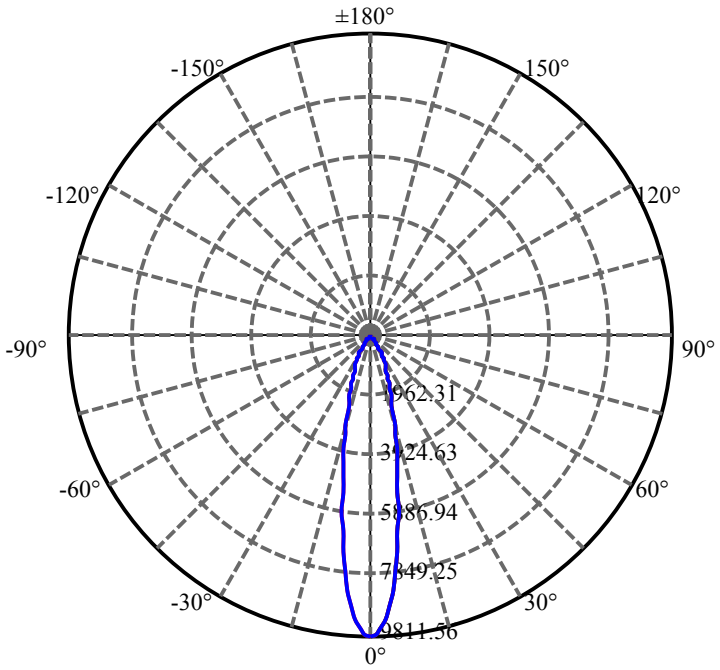
| Zone | Lumens | %Lamp | %Fixt |
|---|---|---|---|
| 0-30 | 2107.55 | 81.85% | 86.21% |
| 0-40 | 2337.98 | 90.80% | 95.64% |
| 0-60 | 2398.51 | 93.15% | 98.12% |
| 0-90 | 2443.42 | 94.90% | 99.95% |
| 0-120 | 2443.42 | 94.90% | 99.95% |
| 0-180 | 2444.53 | 94.94% | 100.00% |
| 60-90 | 44.91 | 1.74% | 1.84% |
| 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% |
| 0-26.81 | 1955.62 | 75.95% | 80.00% |

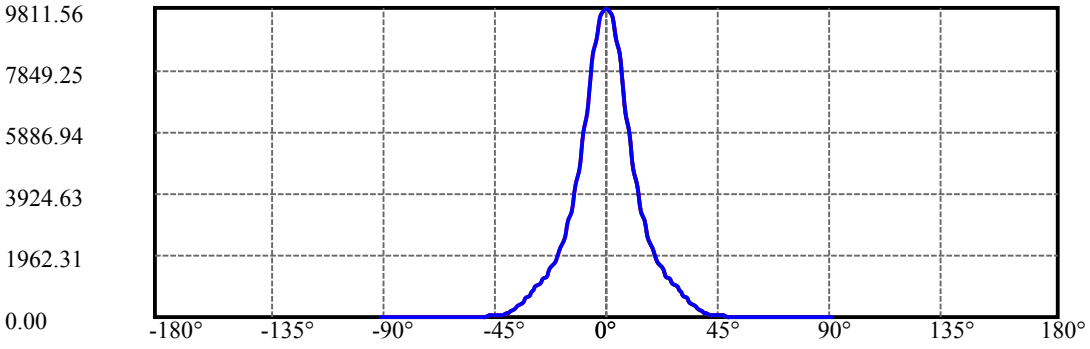
ZONAL LUMEN SUMMARY

| | |
|---|---|
| 0-10 | 689.71 |
| 10-20 | 856.34 |
| 20-30 | 561.49 |
| 30-40 | 230.43 |
| 40-50 | 35.96 |
| 50-60 | 24.57 |
| 60-70 | 19.83 |
| 70-80 | 14.25 |
| 80-90 | 10.82 |
| 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:27.7 Right:27.7
:C90/270Left:27.7 Right:27.7

Beam Angle(50%Imax):C0/180Left:10.6 Right:10.6
:C90/270Left:10.6 Right:10.6

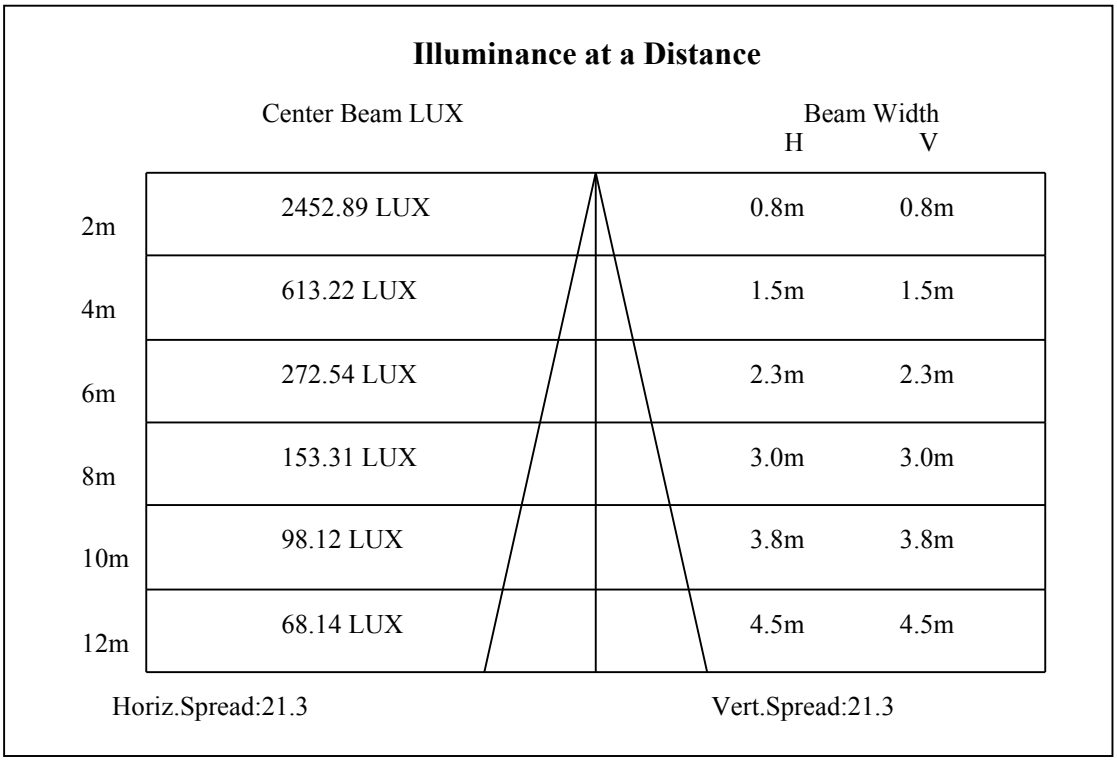
Equipment: GMS1980
Temperature(°C): 0.0

Date: 2023/10/16
Humidity(%): 0.0%

Operator: NT07
Distance(m): 7.44

Lux distance Curve

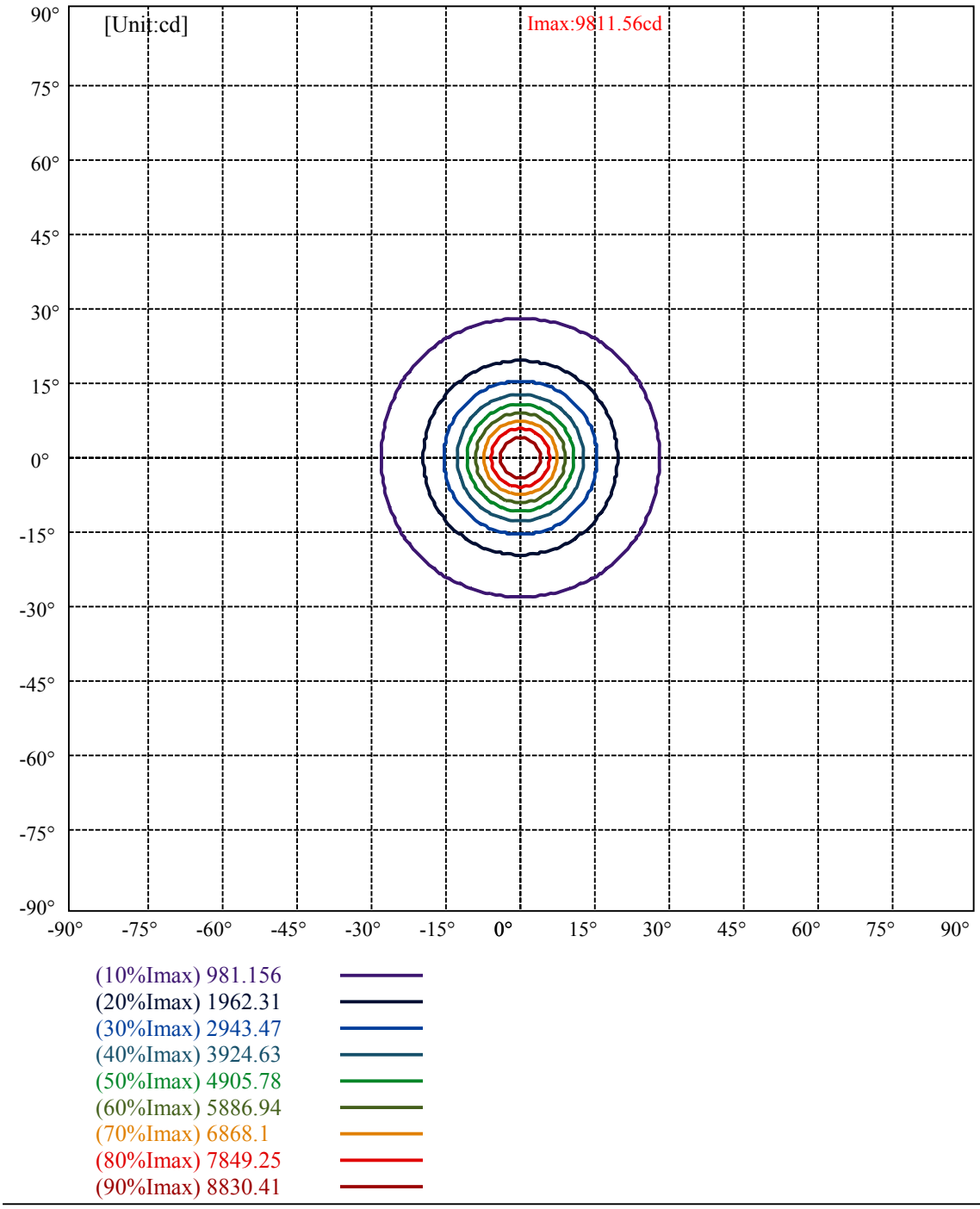





Equipment: GMS1980 Date: 2023/10/16 Operator: NT07
Temperature(°C): 0.0 Humidity(%): 0.0% Distance(m): 7.44

ISO-Intensity(V-H)





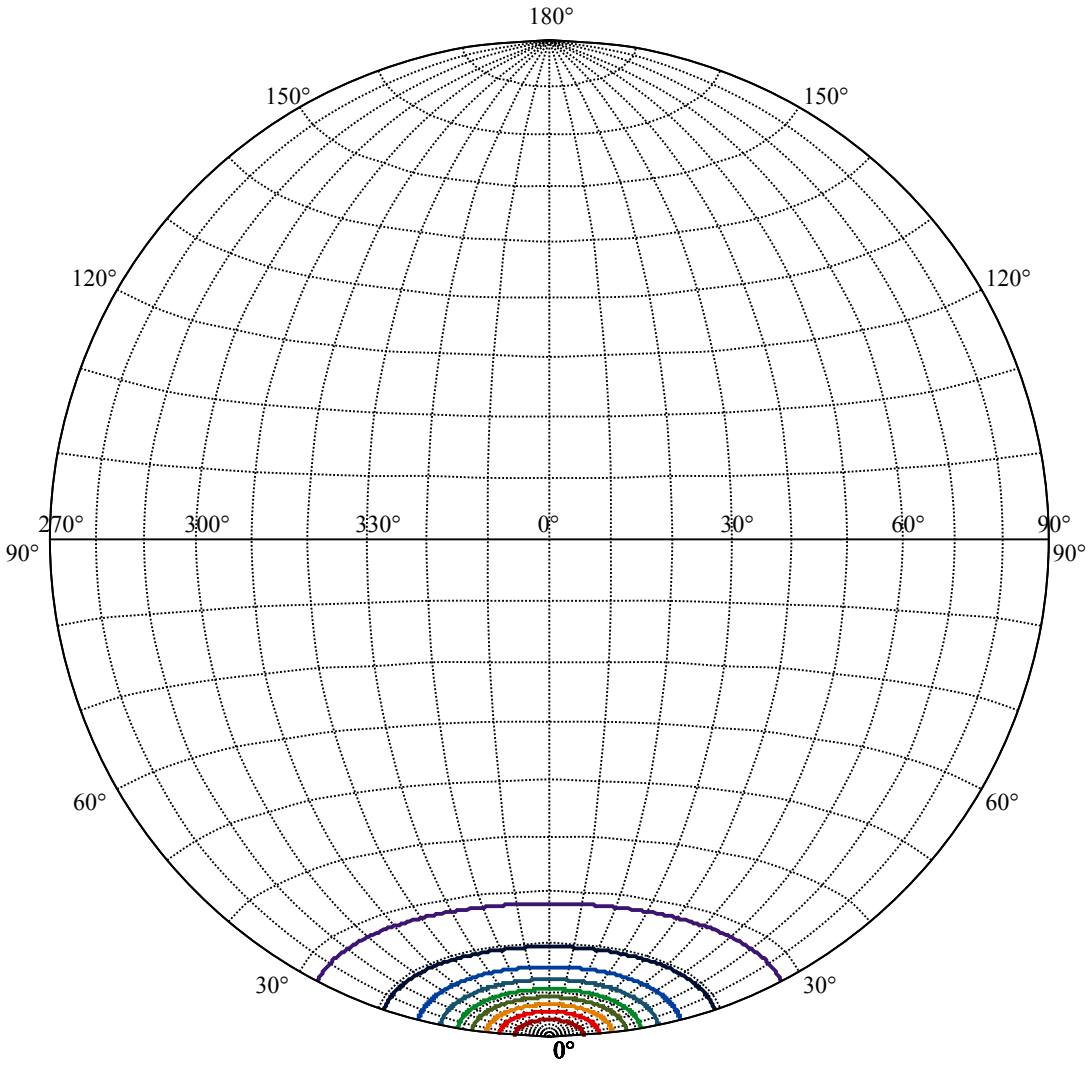

Equipment: GMS1980
Temperature(°C): 0.0

Date: 2023/10/16
Humidity(%): 0.0%

Operator: NT07
Distance(m): 7.44

ISO candela diagram on circular web






House [Unit:cd] Road

Imax:9811.56

(10%Imax) 981.156
(20%Imax) 1962.31
(30%Imax) 2943.47
(40%Imax) 3924.63
(50%Imax) 4905.78
(60%Imax) 5886.94
(70%Imax) 6868.1
(80%Imax) 7849.25
(90%Imax) 8830.41

Equipment: GMS1980
Temperature(°C): 0.0

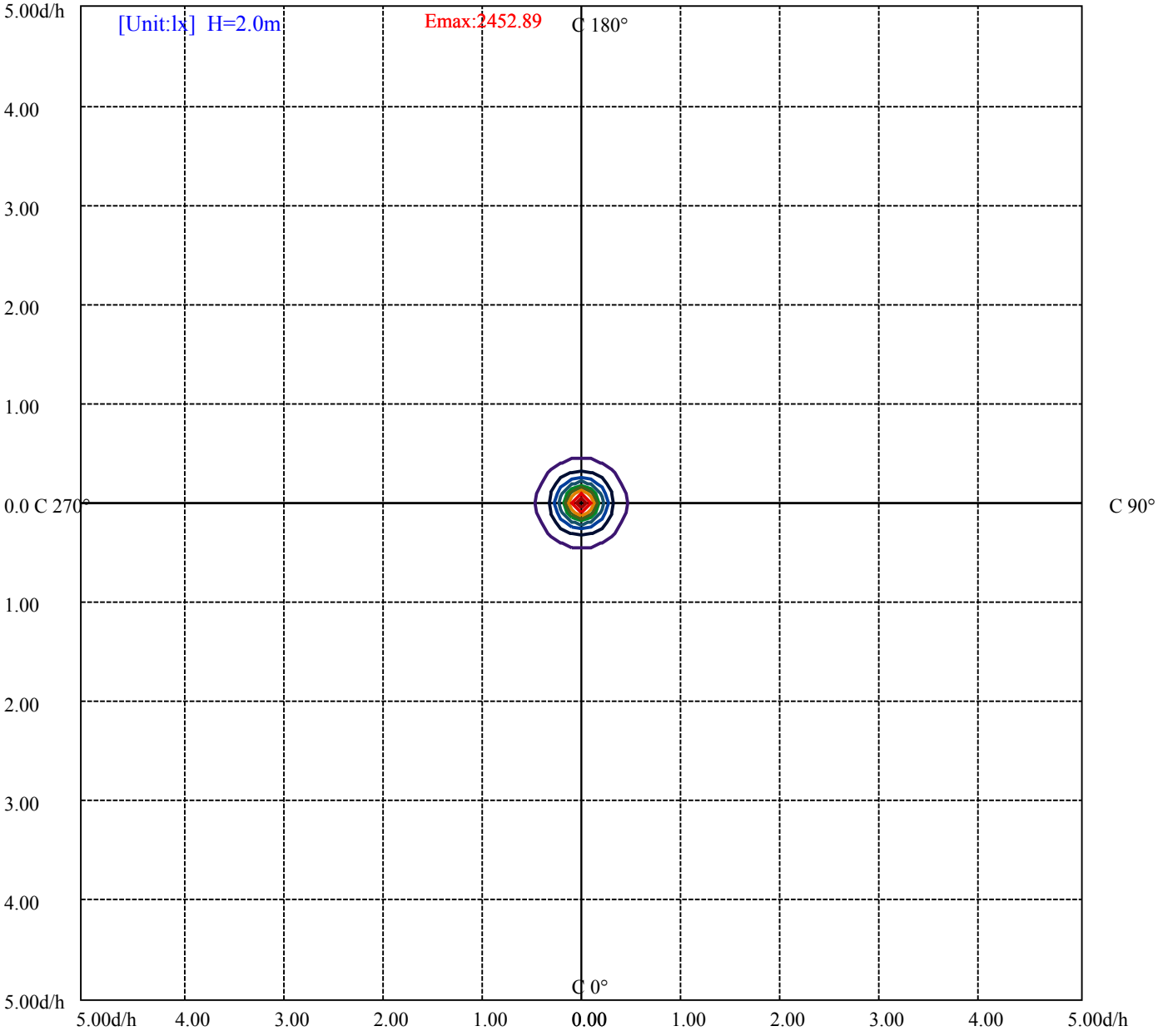
Date: 2023/10/16
Humidity(%): 0.0%

Operator: NT07
Distance(m): 7.44

NATA 2-2639-L

ISO illuminance diagram





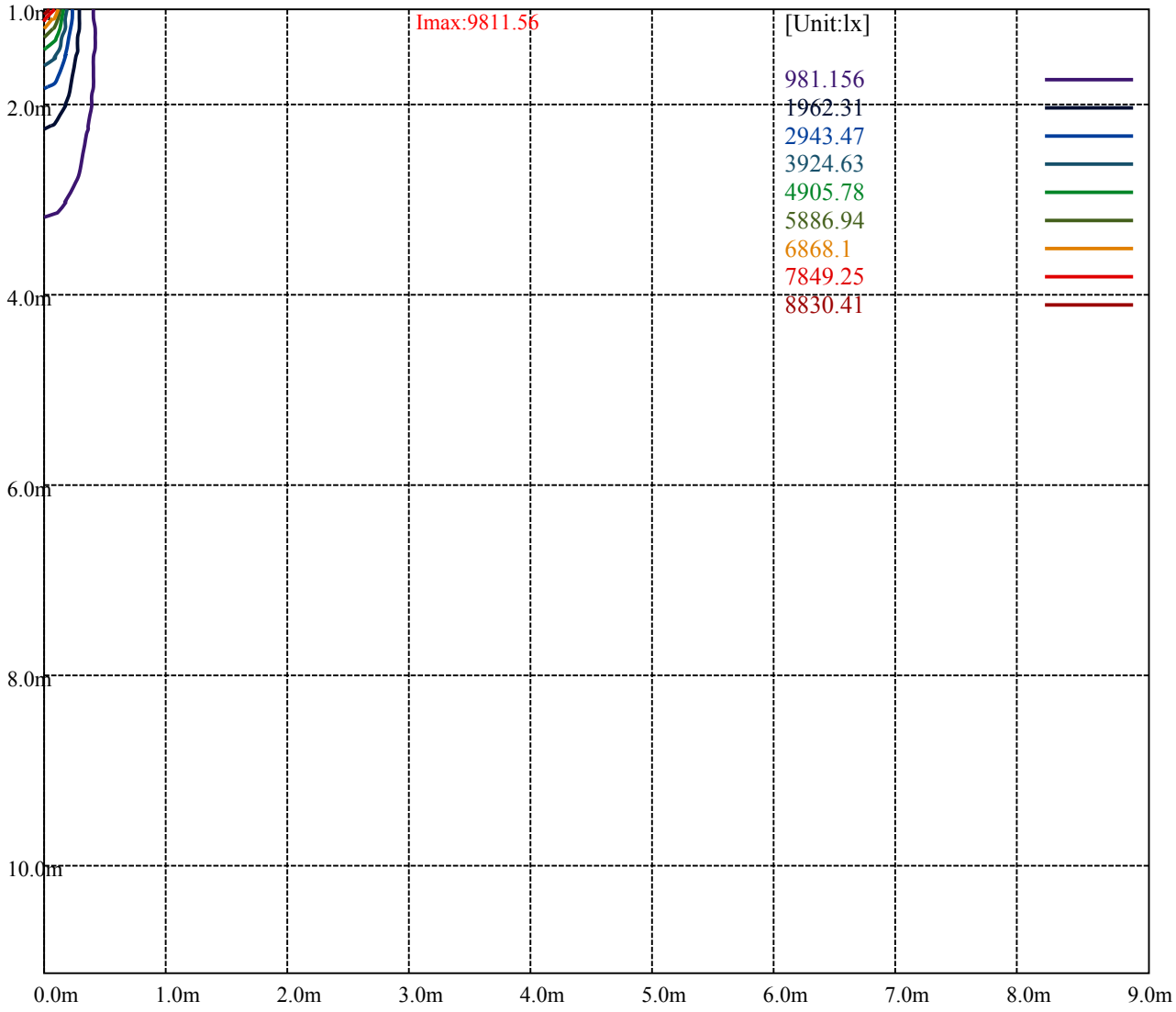

Equipment: GMS1980
Temperature(°C): 0.0

Date: 2023/10/16
Humidity(%): 0.0%

Operator: NT07
Distance(m): 7.44

Space ISO Lux diagram






Equipment: GMS1980
Temperature(°C): 0.0

Date: 2023/10/16
Humidity(%): 0.0%

Operator: NT07
Distance(m): 7.44

## Luminance Limitting Curve(no luminous side)



Luminance Table

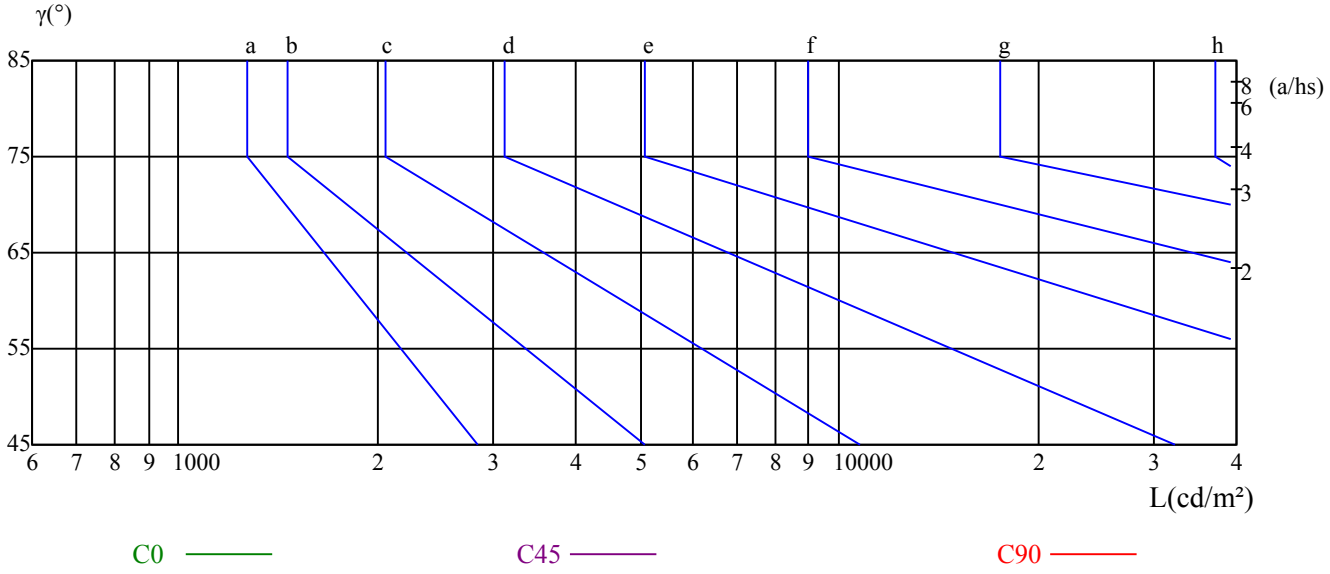
| γ | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 |
|---|---|---|---|---|---|---|---|---|---|
| C0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C90 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| 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

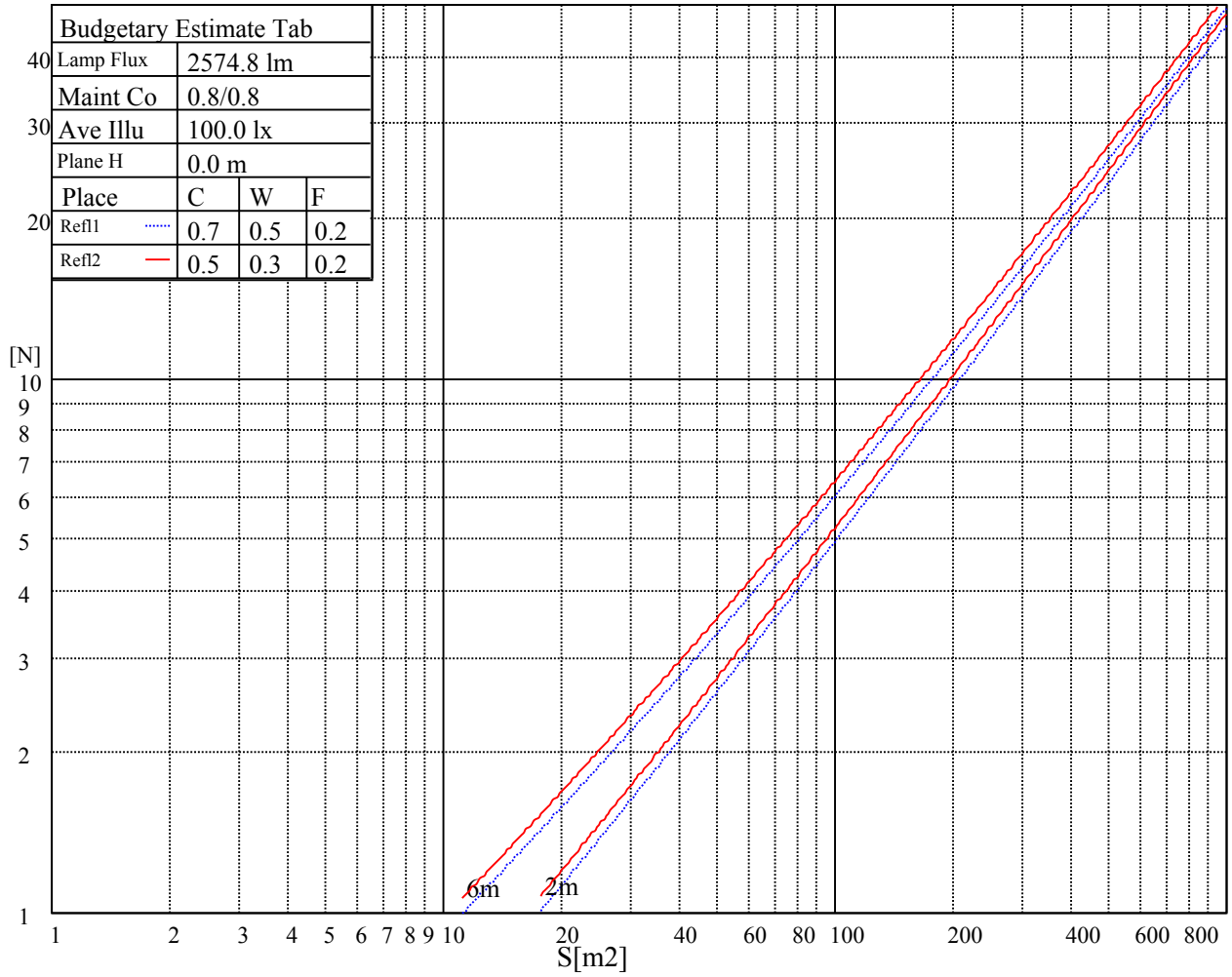


| Illumination assessment according UGR | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Rf of Ceiling | | 70 | 70 | 50 | 50 | 30 | 70 | 70 | 50 | 50 | 30 |
| Rf of Wall | | 50 | 30 | 50 | 30 | 30 | 50 | 30 | 50 | 30 | 30 |
| Rf of Floor | | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 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





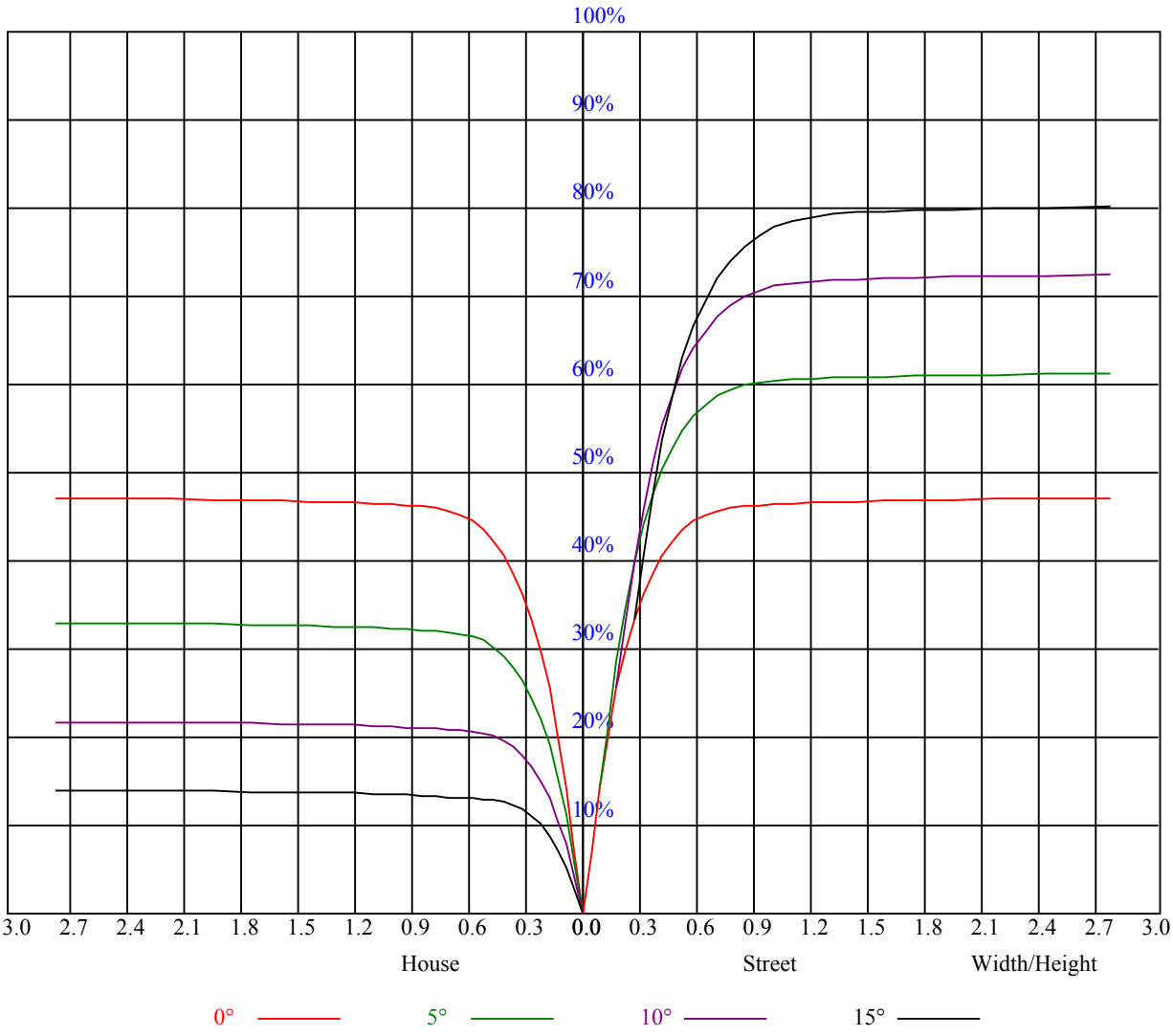
Utilization factor table for indoor luminaire



| 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 | 1.13 | 1.13 | 1.13 | 1.10 | 1.10 | 1.10 | 1.05 | 1.05 | 1.05 | 1.01 | 1.01 | 1.01 | 0.97 | 0.97 | 0.97 | 0.95 |
| 1 | 1.06 | 1.04 | 1.02 | 1.04 | 1.02 | 1.00 | 1.00 | 0.99 | 0.97 | 0.97 | 0.96 | 0.94 | 0.93 | 0.93 | 0.92 | 0.90 |
| 2 | 1.00 | 0.97 | 0.94 | 0.98 | 0.95 | 0.93 | 0.95 | 0.93 | 0.91 | 0.93 | 0.91 | 0.89 | 0.90 | 0.89 | 0.87 | 0.86 |
| 3 | 0.95 | 0.91 | 0.88 | 0.94 | 0.90 | 0.87 | 0.91 | 0.88 | 0.86 | 0.89 | 0.86 | 0.84 | 0.87 | 0.85 | 0.83 | 0.82 |
| 4 | 0.90 | 0.86 | 0.83 | 0.89 | 0.85 | 0.82 | 0.87 | 0.84 | 0.81 | 0.85 | 0.83 | 0.80 | 0.84 | 0.81 | 0.79 | 0.78 |
| 5 | 0.86 | 0.82 | 0.78 | 0.85 | 0.81 | 0.78 | 0.84 | 0.80 | 0.77 | 0.82 | 0.79 | 0.77 | 0.81 | 0.78 | 0.76 | 0.75 |
| 6 | 0.82 | 0.78 | 0.75 | 0.82 | 0.77 | 0.74 | 0.80 | 0.77 | 0.74 | 0.79 | 0.76 | 0.73 | 0.78 | 0.75 | 0.73 | 0.72 |
| 7 | 0.79 | 0.75 | 0.71 | 0.79 | 0.74 | 0.71 | 0.77 | 0.74 | 0.71 | 0.76 | 0.73 | 0.70 | 0.75 | 0.72 | 0.70 | 0.69 |
| 8 | 0.76 | 0.72 | 0.68 | 0.76 | 0.71 | 0.68 | 0.75 | 0.71 | 0.68 | 0.74 | 0.70 | 0.68 | 0.73 | 0.70 | 0.67 | 0.66 |
| 9 | 0.73 | 0.69 | 0.66 | 0.73 | 0.69 | 0.66 | 0.72 | 0.68 | 0.65 | 0.71 | 0.68 | 0.65 | 0.71 | 0.67 | 0.65 | 0.64 |
| 10 | 0.71 | 0.66 | 0.63 | 0.70 | 0.66 | 0.63 | 0.70 | 0.66 | 0.63 | 0.69 | 0.65 | 0.63 | 0.68 | 0.65 | 0.63 | 0.62 |

## Coefficient Utilization Curve






| | | |
|---|---|---|
| Equipment: GMS1980 | Date: 2023/10/16 | 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 | 9718.99 | 9519.71 | 9199.21 | 8778.53 | 8118.16 | 7540.82 | 6942.45 | 6174.69 | 5595.14 |
| 45.0 | 9864.01 | 9809.76 | 9674.70 | 9348.12 | 8927.98 | 8432.57 | 7726.26 | 7131.76 | 6364.56 |
| 90.0 | 9816.96 | 9670.27 | 9410.11 | 8916.36 | 8422.60 | 7854.68 | 7119.03 | 6518.44 | 5911.76 |
| 135.0 | 9846.30 | 9828.59 | 9702.93 | 9373.58 | 8979.46 | 8498.99 | 7960.95 | 7236.93 | 6645.20 |
| 180.0 | 9718.99 | 9851.83 | 9830.80 | 9695.74 | 9474.88 | 9021.53 | 8570.95 | 8036.24 | 7312.21 |
| 225.0 | 9864.01 | 9751.64 | 9543.51 | 9250.14 | 8839.97 | 8351.75 | 7673.67 | 7094.67 | 6504.60 |
| 270.0 | 9816.96 | 9867.89 | 9767.70 | 9573.41 | 9179.29 | 8738.12 | 8247.69 | 7693.04 | 6969.02 |
| 315.0 | 9846.30 | 9758.84 | 9534.10 | 9206.41 | 8790.71 | 8151.92 | 7600.05 | 6854.99 | 6261.60 |
| 360.0 | 9718.99 | 9519.71 | 9199.21 | 8778.53 | 8118.16 | 7540.82 | 6942.45 | 6174.69 | 5595.14 |

| C/γ(°) | 9.0 | 10.0 | 11.0 | 12.0 | 13.0 | 14.0 | 15.0 | 16.0 | 17.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 5049.91 | 4438.25 | 4004.28 | 3611.82 | 3177.85 | 2871.74 | 2601.62 | 2357.51 | 2107.87 |
| 45.0 | 5770.06 | 5223.72 | 4723.32 | 4149.86 | 3743.56 | 3373.80 | 3041.13 | 2672.47 | 2421.72 |
| 90.0 | 5341.62 | 4708.93 | 4242.30 | 3809.43 | 3436.91 | 3023.41 | 2732.25 | 2413.97 | 2204.73 |
| 135.0 | 6058.45 | 5341.62 | 4836.80 | 4362.97 | 3829.92 | 3457.94 | 3121.39 | 2743.32 | 2494.23 |
| 180.0 | 6729.34 | 5988.71 | 5421.33 | 4889.94 | 4418.88 | 3881.39 | 3498.35 | 3170.10 | 2878.39 |
| 225.0 | 5784.45 | 5230.36 | 4720.56 | 4153.73 | 3749.65 | 3387.09 | 2982.45 | 2699.04 | 2449.95 |
| 270.0 | 6391.13 | 5825.97 | 5266.90 | 4623.69 | 4160.93 | 3736.92 | 3275.83 | 2976.92 | 2628.74 |
| 315.0 | 5662.67 | 4986.81 | 4500.80 | 4061.85 | 3656.66 | 3219.92 | 2914.37 | 2639.81 | 2399.03 |
| 360.0 | 5049.91 | 4438.25 | 4004.28 | 3611.82 | 3177.85 | 2871.74 | 2601.62 | 2357.51 | 2107.87 |

| C/γ(°) | 18.0 | 19.0 | 20.0 | 21.0 | 22.0 | 23.0 | 24.0 | 25.0 | 26.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 1940.14 | 1786.26 | 1651.20 | 1502.85 | 1400.45 | 1210.58 | 1095.67 | 1095.67 | 1009.32 |
| 45.0 | 2206.39 | 1972.25 | 1812.28 | 1670.57 | 1522.22 | 1417.05 | 1292.51 | 1197.30 | 1110.95 |
| 90.0 | 2014.87 | 1811.17 | 1671.13 | 1547.13 | 1409.30 | 1308.01 | 1097.99 | 1097.99 | 1033.73 |
| 135.0 | 2282.78 | 2094.03 | 1886.45 | 1736.44 | 1604.15 | 1485.69 | 1350.63 | 1254.31 | 1140.84 |
| 180.0 | 2531.32 | 2308.80 | 2108.97 | 1881.47 | 1732.57 | 1603.59 | 1467.98 | 1371.66 | 1281.44 |
| 225.0 | 2231.30 | 1990.52 | 1824.45 | 1688.84 | 1565.40 | 1433.10 | 1339.56 | 1097.72 | 1097.72 |
| 270.0 | 2388.51 | 2195.32 | 1979.44 | 1815.60 | 1678.87 | 1558.76 | 1424.80 | 1333.47 | 1244.35 |
| 315.0 | 2193.66 | 1972.80 | 1822.24 | 1656.73 | 1543.81 | 1441.96 | 1321.29 | 1093.07 | 1093.07 |
| 360.0 | 1940.14 | 1786.26 | 1651.20 | 1502.85 | 1400.45 | 1210.58 | 1095.67 | 1095.67 | 1009.32 |

| C/γ(°) | 27.0 | 28.0 | 29.0 | 30.0 | 31.0 | 32.0 | 33.0 | 34.0 | 35.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 900.16 | 811.37 | 701.55 | 615.48 | 532.34 | 453.73 | 362.79 | 296.97 | 238.41 |
| 45.0 | 1023.49 | 934.92 | 824.77 | 737.86 | 653.17 | 549.66 | 471.61 | 397.44 | 331.01 |
| 90.0 | 928.61 | 843.26 | 759.40 | 674.37 | 571.91 | 493.64 | 421.19 | 339.21 | 280.26 |
| 135.0 | 1050.06 | 962.05 | 857.43 | 771.08 | 685.28 | 600.59 | 500.95 | 427.33 | 358.69 |
| 180.0 | 1176.26 | 1092.13 | 1009.10 | 902.82 | 814.25 | 724.58 | 636.01 | 530.84 | 453.90 |
| 225.0 | 1054.38 | 974.50 | 870.16 | 786.57 | 675.70 | 588.63 | 506.60 | 431.76 | 346.90 |
| 270.0 | 1158.55 | 1073.31 | 968.13 | 881.23 | 771.08 | 681.40 | 593.94 | 490.99 | 415.71 |
| 315.0 | 1027.97 | 941.56 | 854.05 | 766.32 | 652.51 | 564.94 | 483.79 | 409.84 | 326.36 |
| 360.0 | 900.16 | 811.37 | 701.55 | 615.48 | 532.34 | 453.73 | 362.79 | 296.97 | 238.41 |

| C/γ(°) | 36.0 | 37.0 | 38.0 | 39.0 | 40.0 | 41.0 | 42.0 | 43.0 | 44.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 188.98 | 139.82 | 109.49 | 86.91 | 70.19 | 55.74 | 47.55 | 40.41 | 36.42 |
| 45.0 | 284.52 | 284.52 | 156.93 | 115.69 | 91.94 | 74.01 | 58.56 | 49.65 | 43.12 |
| 90.0 | 215.27 | 172.09 | 136.00 | 101.80 | 81.65 | 66.76 | 55.85 | 46.05 | 40.63 |
| 135.0 | 282.30 | 282.30 | 215.60 | 138.99 | 109.60 | 82.64 | 67.59 | 56.41 | 46.88 |
| 180.0 | 382.49 | 316.07 | 286.73 | 286.73 | 148.29 | 107.99 | 84.47 | 67.59 | 53.25 |
| 225.0 | 286.12 | 231.32 | 184.00 | 135.78 | 105.73 | 83.03 | 66.65 | 52.75 | 45.39 |
| 270.0 | 348.17 | 287.29 | 287.29 | 168.22 | 130.41 | 94.54 | 73.90 | 59.62 | 49.54 |
| 315.0 | 266.14 | 213.44 | 159.36 | 124.55 | 97.48 | 72.79 | 59.39 | 49.82 | 41.68 |
| 360.0 | 188.98 | 139.82 | 109.49 | 86.91 | 70.19 | 55.74 | 47.55 | 40.41 | 36.42 |

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 | 33.49 | 30.83 | 29.28 | 28.12 | 27.18 | 26.51 | 26.18 | 26.18 | 26.40 |
| 45.0 | 37.59 | 34.37 | 31.99 | 30.17 | 28.51 | 27.57 | 26.96 | 26.57 | 26.46 |
| 90.0 | 36.64 | 33.71 | 31.11 | 29.56 | 28.40 | 27.46 | 26.96 | 26.74 | 26.79 |
| 135.0 | 41.35 | 36.59 | 33.71 | 31.55 | 29.56 | 28.40 | 27.57 | 27.01 | 26.74 |
| 180.0 | 45.50 | 40.13 | 35.37 | 32.66 | 30.61 | 29.01 | 27.51 | 26.74 | 26.24 |
| 225.0 | 39.13 | 35.59 | 32.99 | 30.61 | 29.17 | 28.01 | 27.18 | 26.63 | 26.51 |
| 270.0 | 41.35 | 37.03 | 33.88 | 31.11 | 29.50 | 28.06 | 27.29 | 26.79 | 26.51 |
| 315.0 | 37.31 | 34.10 | 31.72 | 29.50 | 28.17 | 27.34 | 26.79 | 26.40 | 26.24 |
| 360.0 | 33.49 | 30.83 | 29.28 | 28.12 | 27.18 | 26.51 | 26.18 | 26.18 | 26.40 |

| C/γ(°) | 54.0 | 55.0 | 56.0 | 57.0 | 58.0 | 59.0 | 60.0 | 61.0 | 62.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 26.96 | 27.51 | 28.01 | 28.34 | 28.12 | 27.29 | 25.41 | 23.58 | 21.64 |
| 45.0 | 26.63 | 27.01 | 27.73 | 28.40 | 28.78 | 28.67 | 28.01 | 26.68 | 24.36 |
| 90.0 | 27.12 | 27.57 | 28.29 | 28.56 | 28.67 | 28.01 | 26.85 | 25.08 | 23.30 |
| 135.0 | 26.85 | 27.12 | 27.68 | 28.34 | 28.73 | 28.78 | 28.12 | 26.96 | 25.30 |
| 180.0 | 26.02 | 26.13 | 26.46 | 27.01 | 27.84 | 28.29 | 28.45 | 28.01 | 27.01 |
| 225.0 | 26.51 | 26.90 | 27.46 | 28.06 | 28.34 | 28.29 | 27.68 | 26.46 | 24.24 |
| 270.0 | 26.57 | 26.79 | 27.29 | 27.95 | 28.56 | 28.78 | 28.62 | 27.68 | 25.91 |
| 315.0 | 26.40 | 26.96 | 27.40 | 28.01 | 28.06 | 27.84 | 26.74 | 25.41 | 23.58 |
| 360.0 | 26.96 | 27.51 | 28.01 | 28.34 | 28.12 | 27.29 | 25.41 | 23.58 | 21.64 |

| C/γ(°) | 63.0 | 64.0 | 65.0 | 66.0 | 67.0 | 68.0 | 69.0 | 70.0 | 71.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 19.60 | 18.32 | 17.38 | 16.66 | 15.89 | 15.33 | 14.89 | 14.50 | 14.06 |
| 45.0 | 22.36 | 20.48 | 19.15 | 17.82 | 16.94 | 16.27 | 15.67 | 15.17 | 14.78 |
| 90.0 | 21.37 | 19.43 | 18.21 | 17.10 | 16.44 | 15.89 | 15.28 | 14.89 | 14.45 |
| 135.0 | 22.86 | 20.92 | 19.37 | 18.05 | 17.16 | 16.50 | 15.83 | 15.39 | 14.95 |
| 180.0 | 25.41 | 22.92 | 20.98 | 19.37 | 18.21 | 17.10 | 16.44 | 15.94 | 15.33 |
| 225.0 | 22.36 | 20.09 | 18.76 | 17.71 | 16.94 | 16.33 | 15.67 | 15.22 | 14.78 |
| 270.0 | 24.02 | 22.14 | 19.87 | 18.60 | 17.44 | 16.72 | 16.11 | 15.61 | 15.11 |
| 315.0 | 21.70 | 19.60 | 18.38 | 17.44 | 16.66 | 16.11 | 15.44 | 15.06 | 14.56 |
| 360.0 | 19.60 | 18.32 | 17.38 | 16.66 | 15.89 | 15.33 | 14.89 | 14.50 | 14.06 |

| C/γ(°) | 72.0 | 73.0 | 74.0 | 75.0 | 76.0 | 77.0 | 78.0 | 79.0 | 80.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 13.78 | 13.40 | 13.17 | 12.90 | 12.62 | 12.45 | 12.18 | 11.96 | 11.73 |
| 45.0 | 14.28 | 13.95 | 13.73 | 13.40 | 13.12 | 12.90 | 12.62 | 12.34 | 12.12 |
| 90.0 | 14.06 | 13.73 | 13.45 | 13.23 | 12.90 | 12.68 | 12.45 | 12.18 | 11.90 |
| 135.0 | 14.56 | 14.17 | 13.84 | 13.51 | 13.23 | 12.95 | 12.73 | 12.45 | 12.23 |
| 180.0 | 14.95 | 14.50 | 14.12 | 13.78 | 13.51 | 13.17 | 12.95 | 12.68 | 12.40 |
| 225.0 | 14.34 | 14.00 | 13.67 | 13.34 | 13.12 | 12.84 | 12.57 | 12.34 | 12.07 |
| 270.0 | 14.67 | 14.34 | 14.00 | 13.67 | 13.40 | 13.17 | 12.84 | 12.62 | 12.40 |
| 315.0 | 14.23 | 13.89 | 13.51 | 13.28 | 13.06 | 12.79 | 12.51 | 12.29 | 12.07 |
| 360.0 | 13.78 | 13.40 | 13.17 | 12.90 | 12.62 | 12.45 | 12.18 | 11.96 | 11.73 |

| C/γ(°) | 81.0 | 82.0 | 83.0 | 84.0 | 85.0 | 86.0 | 87.0 | 88.0 | 89.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 11.46 | 11.24 | 11.07 | 10.79 | 10.63 | 10.46 | 10.30 | 10.13 | 10.13 |
| 45.0 | 11.79 | 11.57 | 11.29 | 11.07 | 10.85 | 10.63 | 10.46 | 10.24 | 10.07 |
| 90.0 | 11.68 | 11.40 | 11.13 | 10.96 | 10.68 | 10.57 | 10.41 | 10.24 | 10.07 |
| 135.0 | 11.90 | 11.68 | 11.40 | 11.18 | 10.96 | 10.74 | 10.57 | 10.41 | 10.19 |
| 180.0 | 12.18 | 11.85 | 11.62 | 11.35 | 11.13 | 10.85 | 10.68 | 10.52 | 10.35 |
| 225.0 | 11.79 | 11.57 | 11.29 | 11.07 | 10.79 | 10.68 | 10.46 | 10.30 | 10.13 |
| 270.0 | 12.07 | 11.79 | 11.51 | 11.24 | 11.02 | 10.74 | 10.57 | 10.41 | 10.24 |
| 315.0 | 11.79 | 11.51 | 11.29 | 11.02 | 10.85 | 10.63 | 10.46 | 10.30 | 10.13 |
| 360.0 | 11.46 | 11.24 | 11.07 | 10.79 | 10.63 | 10.46 | 10.30 | 10.13 | 10.13 |

Intensity data(cd)

| C/γ(°) | 90.0 |
|---|---|
| 0.0 | 10.07 |
| 45.0 | 10.07 |
| 90.0 | 10.07 |
| 135.0 | 10.13 |
| 180.0 | 10.13 |
| 225.0 | 10.07 |
| 270.0 | 10.13 |
| 315.0 | 10.07 |
| 360.0 | 10.07 |