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: 3-2832-L
Luminaire: 92.70.411.00
Report No: 2024417-B010
Ballast type: AC

| | |
|---|---|
| Test No: 2024417-C010 | Voltage(V): 33.770 |
| LampCAT: NICHIA NFCWJ108B-V3 | Current(A): 0.577 |
| Lamp flux(lm): 2629.0 | Power (W): 19.485 |
| Number of Lamps: 1 | PF: 0.000 |
| Length(mm): 0 | Width(mm): 0 |
| Phm Type: C | Height(mm): 0 |

## Photometric Results

Lumens(lm): 2237.74, Efficiency(%): 85.12% , Luminous Efficacy(lm/W): 114.84
Central intensity(cd): 11155.030, Maximum intensity(cd): 11155.030
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=17.0
[C90/270]Total=17.0
Field angle(10%Imax): [C0/180]Total=49.4
[C90/270]Total=49.4
Maximum s/h(1/2): C0_180=0.29 C90_270=0.29
Maximum s/h(1/4): C0_180=0.34 C90_270=0.34
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 85.12%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.820%

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 0.0 | 11155.032 | 0.000 | 0 | 0.00% | 0.00% |
| 1.0 | 11040.036 | 10.620 | 10.62 | 0.40% | 0.47% |
| 2.0 | 10688.901 | 31.187 | 41.807 | 1.19% | 1.87% |
| 3.0 | 10143.690 | 49.825 | 91.632 | 1.90% | 4.09% |
| 4.0 | 9450.784 | 65.589 | 157.221 | 2.49% | 7.03% |
| 5.0 | 8671.118 | 77.959 | 235.181 | 2.97% | 10.51% |
| 6.0 | 7748.145 | 86.288 | 321.468 | 3.28% | 14.37% |
| 7.0 | 6858.091 | 90.661 | 412.129 | 3.45% | 18.42% |
| 8.0 | 5998.761 | 92.014 | 504.143 | 3.50% | 22.53% |
| 9.0 | 5199.929 | 90.759 | 594.902 | 3.45% | 26.58% |
| 10.0 | 4525.750 | 88.014 | 682.916 | 3.35% | 30.52% |
| 11.0 | 4014.409 | 85.334 | 768.25 | 3.25% | 34.33% |
| 12.0 | 3546.741 | 82.654 | 850.904 | 3.14% | 38.03% |
| 13.0 | 3181.342 | 79.845 | 930.749 | 3.04% | 41.59% |
| 14.0 | 2861.077 | 77.342 | 1008.092 | 2.94% | 45.05% |
| 15.0 | 2605.773 | 75.051 | 1083.143 | 2.85% | 48.40% |
| 16.0 | 2368.830 | 72.892 | 1156.035 | 2.77% | 51.66% |
| 17.0 | 2167.439 | 70.642 | 1226.677 | 2.69% | 54.82% |
| 18.0 | 1982.069 | 68.416 | 1295.093 | 2.60% | 57.87% |
| 19.0 | 1822.083 | 66.184 | 1361.278 | 2.52% | 60.83% |
| 20.0 | 1675.850 | 64.022 | 1425.3 | 2.44% | 63.69% |
| 21.0 | 1547.832 | 61.901 | 1487.201 | 2.35% | 66.46% |
| 22.0 | 1386.127 | 58.959 | 1546.16 | 2.24% | 69.09% |
| 23.0 | 1266.756 | 55.665 | 1601.825 | 2.12% | 71.58% |
| 24.0 | 1184.210 | 53.587 | 1655.412 | 2.04% | 73.98% |
| 25.0 | 1086.938 | 51.641 | 1707.053 | 1.96% | 76.28% |
| 26.0 | 990.223 | 49.032 | 1756.084 | 1.87% | 78.48% |
| 27.0 | 914.663 | 46.603 | 1802.688 | 1.77% | 80.56% |
| 28.0 | 859.374 | 44.915 | 1847.602 | 1.71% | 82.57% |
| 29.0 | 799.176 | 43.392 | 1890.995 | 1.65% | 84.50% |
| 30.0 | 729.746 | 41.281 | 1932.275 | 1.57% | 86.35% |
| 31.0 | 630.434 | 37.852 | 1970.127 | 1.44% | 88.04% |
| 32.0 | 539.190 | 33.508 | 2003.636 | 1.27% | 89.54% |
| 33.0 | 431.391 | 28.594 | 2032.229 | 1.09% | 90.82% |
| 34.0 | 332.261 | 23.110 | 2055.34 | 0.88% | 91.85% |
| 35.0 | 247.477 | 18.005 | 2073.344 | 0.68% | 92.65% |
| 36.0 | 212.620 | 14.650 | 2087.994 | 0.56% | 93.31% |
| 37.0 | 118.845 | 10.811 | 2098.804 | 0.41% | 93.79% |

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 38.0 | 90.125 | 6.975 | 2105.779 | 0.27% | 94.10% |
| 39.0 | 80.607 | 5.828 | 2111.607 | 0.22% | 94.36% |
| 40.0 | 74.931 | 5.425 | 2117.032 | 0.21% | 94.61% |
| 41.0 | 69.474 | 5.142 | 2122.174 | 0.20% | 94.84% |
| 42.0 | 64.294 | 4.860 | 2127.034 | 0.18% | 95.05% |
| 43.0 | 59.883 | 4.600 | 2131.634 | 0.17% | 95.26% |
| 44.0 | 55.874 | 4.369 | 2136.003 | 0.17% | 95.45% |
| 45.0 | 52.078 | 4.149 | 2140.151 | 0.16% | 95.64% |
| 46.0 | 48.874 | 3.948 | 2144.099 | 0.15% | 95.82% |
| 47.0 | 46.167 | 3.780 | 2147.879 | 0.14% | 95.98% |
| 48.0 | 43.607 | 3.629 | 2151.508 | 0.14% | 96.15% |
| 49.0 | 41.566 | 3.498 | 2155.006 | 0.13% | 96.30% |
| 50.0 | 39.671 | 3.387 | 2158.393 | 0.13% | 96.45% |
| 51.0 | 38.223 | 3.296 | 2161.689 | 0.13% | 96.60% |
| 52.0 | 37.037 | 3.229 | 2164.918 | 0.12% | 96.75% |
| 53.0 | 35.977 | 3.176 | 2168.094 | 0.12% | 96.89% |
| 54.0 | 35.114 | 3.133 | 2171.228 | 0.12% | 97.03% |
| 55.0 | 34.309 | 3.099 | 2174.326 | 0.12% | 97.17% |
| 56.0 | 33.409 | 3.060 | 2177.386 | 0.12% | 97.30% |
| 57.0 | 32.414 | 3.010 | 2180.396 | 0.11% | 97.44% |
| 58.0 | 31.273 | 2.945 | 2183.341 | 0.11% | 97.57% |
| 59.0 | 29.949 | 2.862 | 2186.203 | 0.11% | 97.70% |
| 60.0 | 28.464 | 2.760 | 2188.963 | 0.10% | 97.82% |
| 61.0 | 26.920 | 2.643 | 2191.606 | 0.10% | 97.94% |
| 62.0 | 25.274 | 2.515 | 2194.121 | 0.10% | 98.05% |
| 63.0 | 23.563 | 2.375 | 2196.496 | 0.09% | 98.16% |
| 64.0 | 22.041 | 2.238 | 2198.734 | 0.09% | 98.26% |
| 65.0 | 20.658 | 2.113 | 2200.847 | 0.08% | 98.35% |
| 66.0 | 19.342 | 1.996 | 2202.843 | 0.08% | 98.44% |
| 67.0 | 18.296 | 1.893 | 2204.735 | 0.07% | 98.52% |
| 68.0 | 17.447 | 1.811 | 2206.546 | 0.07% | 98.61% |
| 69.0 | 16.701 | 1.742 | 2208.288 | 0.07% | 98.68% |
| 70.0 | 16.160 | 1.688 | 2209.976 | 0.06% | 98.76% |
| 71.0 | 15.699 | 1.647 | 2211.622 | 0.06% | 98.83% |
| 72.0 | 15.406 | 1.617 | 2213.24 | 0.06% | 98.91% |
| 73.0 | 15.260 | 1.604 | 2214.843 | 0.06% | 98.98% |
| 74.0 | 15.113 | 1.597 | 2216.44 | 0.06% | 99.05% |
| 75.0 | 15.011 | 1.592 | 2218.032 | 0.06% | 99.12% |

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 76.0 | 14.879 | 1.587 | 2219.618 | 0.06% | 99.19% |
| 77.0 | 14.799 | 1.582 | 2221.201 | 0.06% | 99.26% |
| 78.0 | 14.740 | 1.581 | 2222.782 | 0.06% | 99.33% |
| 79.0 | 14.484 | 1.570 | 2224.352 | 0.06% | 99.40% |
| 80.0 | 13.921 | 1.531 | 2225.884 | 0.06% | 99.47% |
| 81.0 | 12.773 | 1.444 | 2227.327 | 0.05% | 99.53% |
| 82.0 | 11.741 | 1.329 | 2228.657 | 0.05% | 99.59% |
| 83.0 | 11.244 | 1.249 | 2229.906 | 0.05% | 99.65% |
| 84.0 | 10.929 | 1.208 | 2231.114 | 0.05% | 99.70% |
| 85.0 | 10.644 | 1.177 | 2232.291 | 0.04% | 99.76% |
| 86.0 | 10.307 | 1.145 | 2233.437 | 0.04% | 99.81% |
| 87.0 | 10.000 | 1.111 | 2234.548 | 0.04% | 99.86% |
| 88.0 | 9.759 | 1.082 | 2235.63 | 0.04% | 99.91% |
| 89.0 | 9.612 | 1.062 | 2236.692 | 0.04% | 99.95% |
| 90.0 | 9.546 | 1.050 | 2237.742 | 0.04% | 100.00% |

## Zonal flux distribution table



ZONAL LUMEN SUMMARY

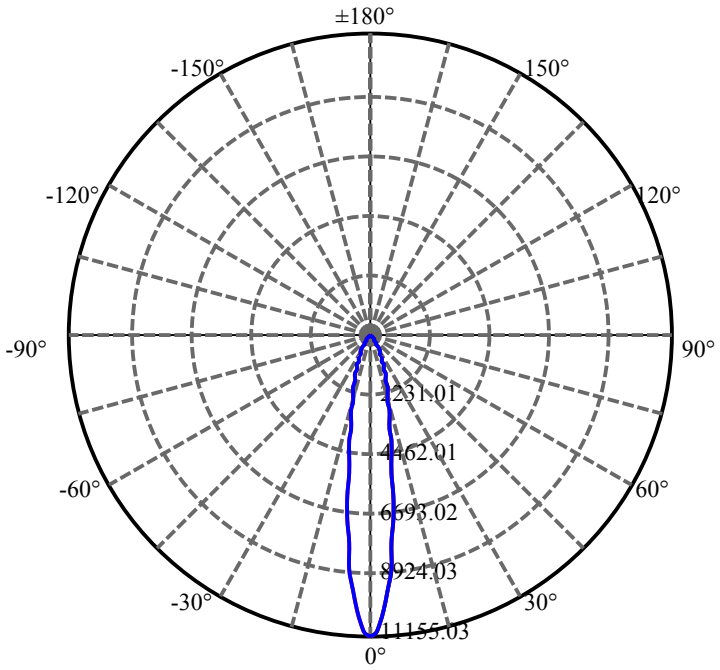
| Zone | Lumens | %Lamp | %Fixt |
|---|---|---|---|
| 0-30 | 1932.28 | 73.50% | 86.35% |
| 0-40 | 2117.03 | 80.53% | 94.61% |
| 0-60 | 2188.96 | 83.26% | 97.82% |
| 0-90 | 2236.69 | 85.08% | 99.95% |
| 0-120 | 2236.69 | 85.08% | 99.95% |
| 0-180 | 2237.74 | 85.12% | 100.00% |
| 60-90 | 47.73 | 1.82% | 2.13% |
| 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% |
| 0-26.73 | 1790.19 | 68.09% | 80.00% |

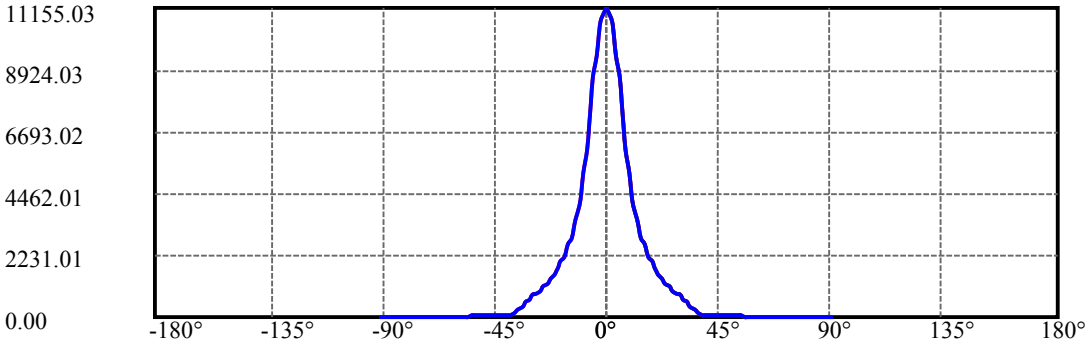
ZONAL LUMEN SUMMARY

| | |
|---|---|
| 0-10 | 682.92 |
| 10-20 | 742.38 |
| 20-30 | 506.98 |
| 30-40 | 184.76 |
| 40-50 | 41.36 |
| 50-60 | 30.57 |
| 60-70 | 21.01 |
| 70-80 | 15.91 |
| 80-90 | 10.81 |
| 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:

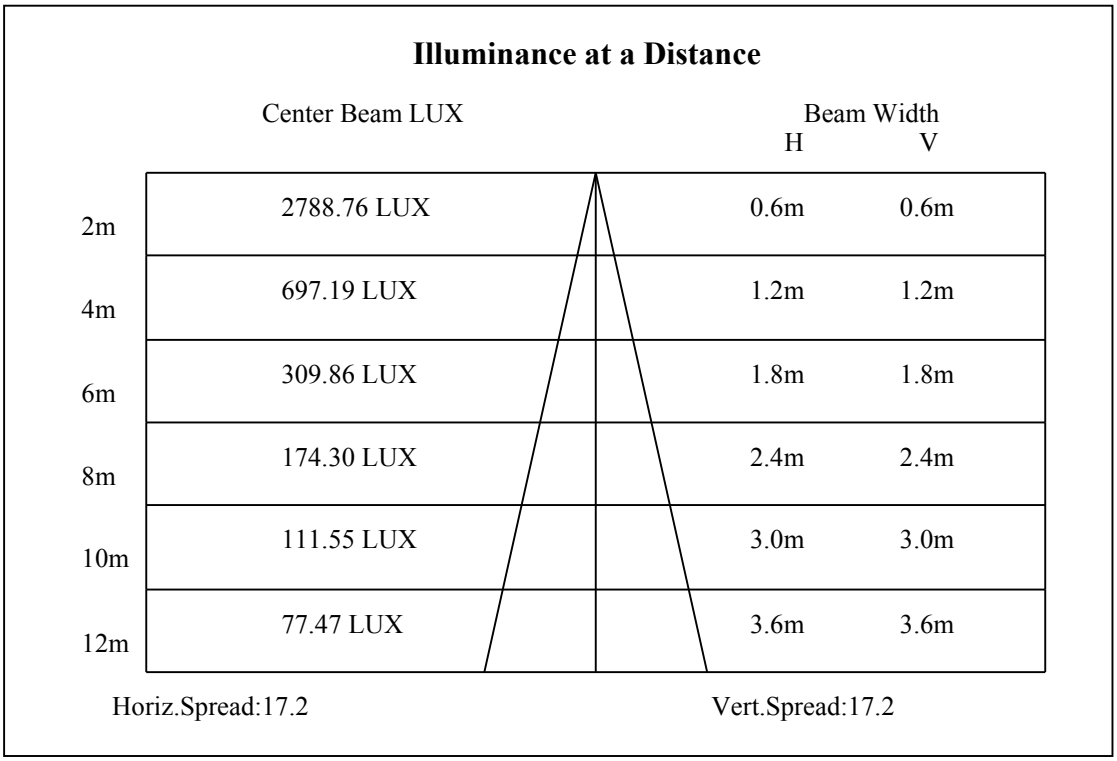
Field angle(10%Imax):C0/180Left:24.7 Right:24.7
:C90/270Left:24.7 Right:24.7

Beam Angle(50%Imax):C0/180Left:8.5 Right:8.5
:C90/270Left:8.5 Right:8.5

| | | |
|---|---|---|
| Equipment: GMS1980 | Date: 2024/4/17 | Operator: NT07 |
| Temperature(°C): 25.0 | Humidity(%): 60.0% | Distance(m): 7.65 |

Lux distance Curve

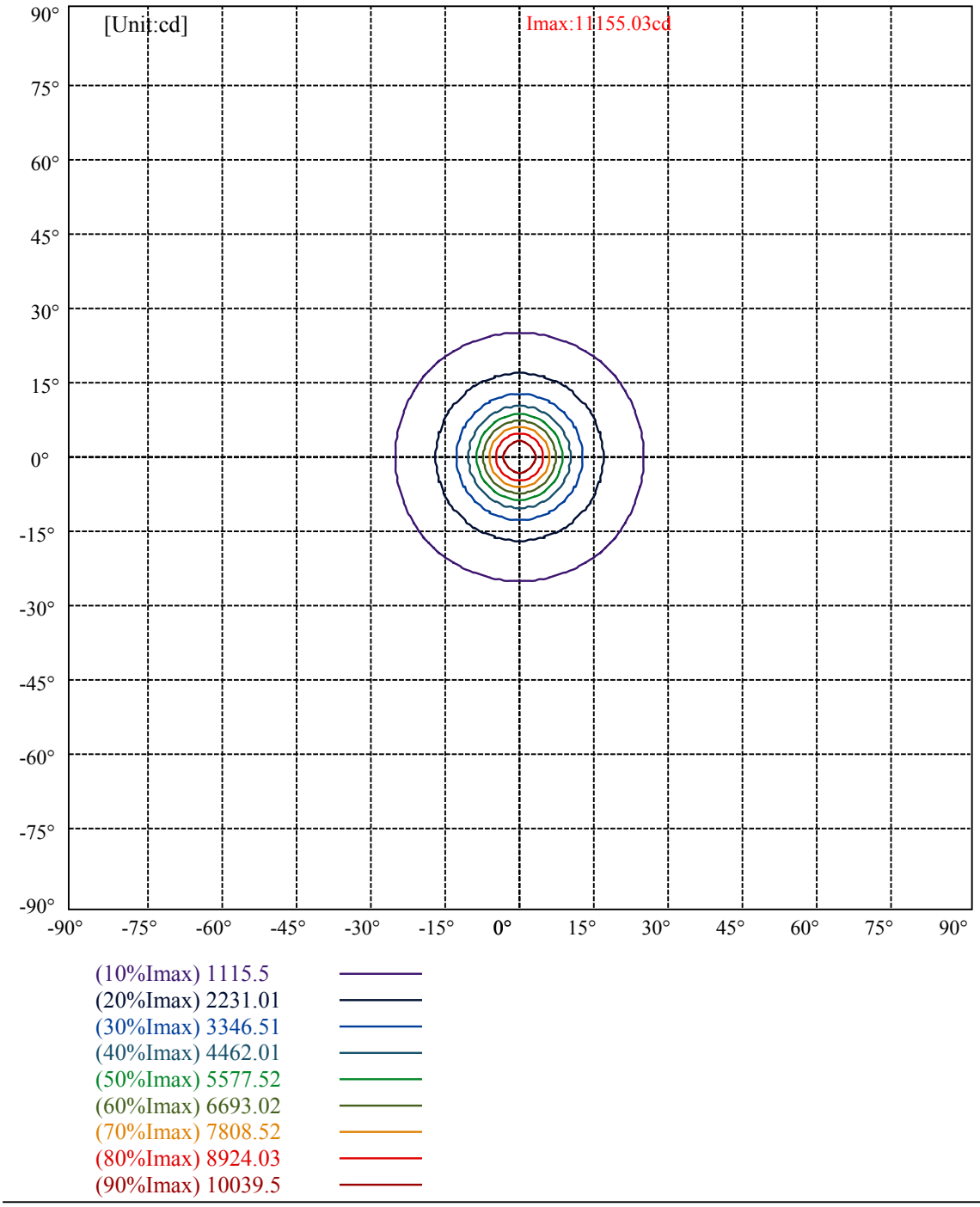





Equipment: GMS1980 Date: 2024/4/17 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.65

ISO-Intensity(V-H)





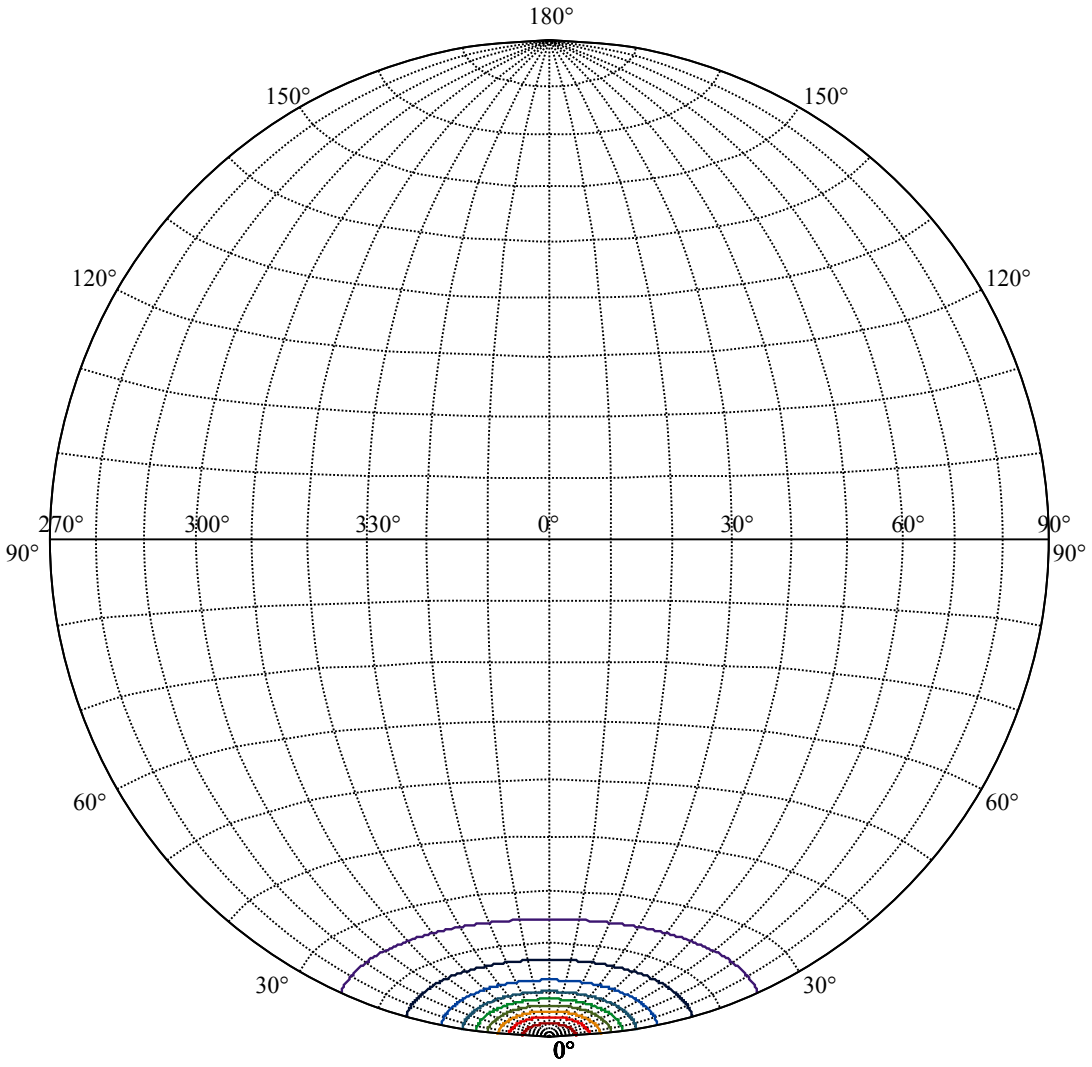

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2024/4/17
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.65

## ISO candela diagram on circular web

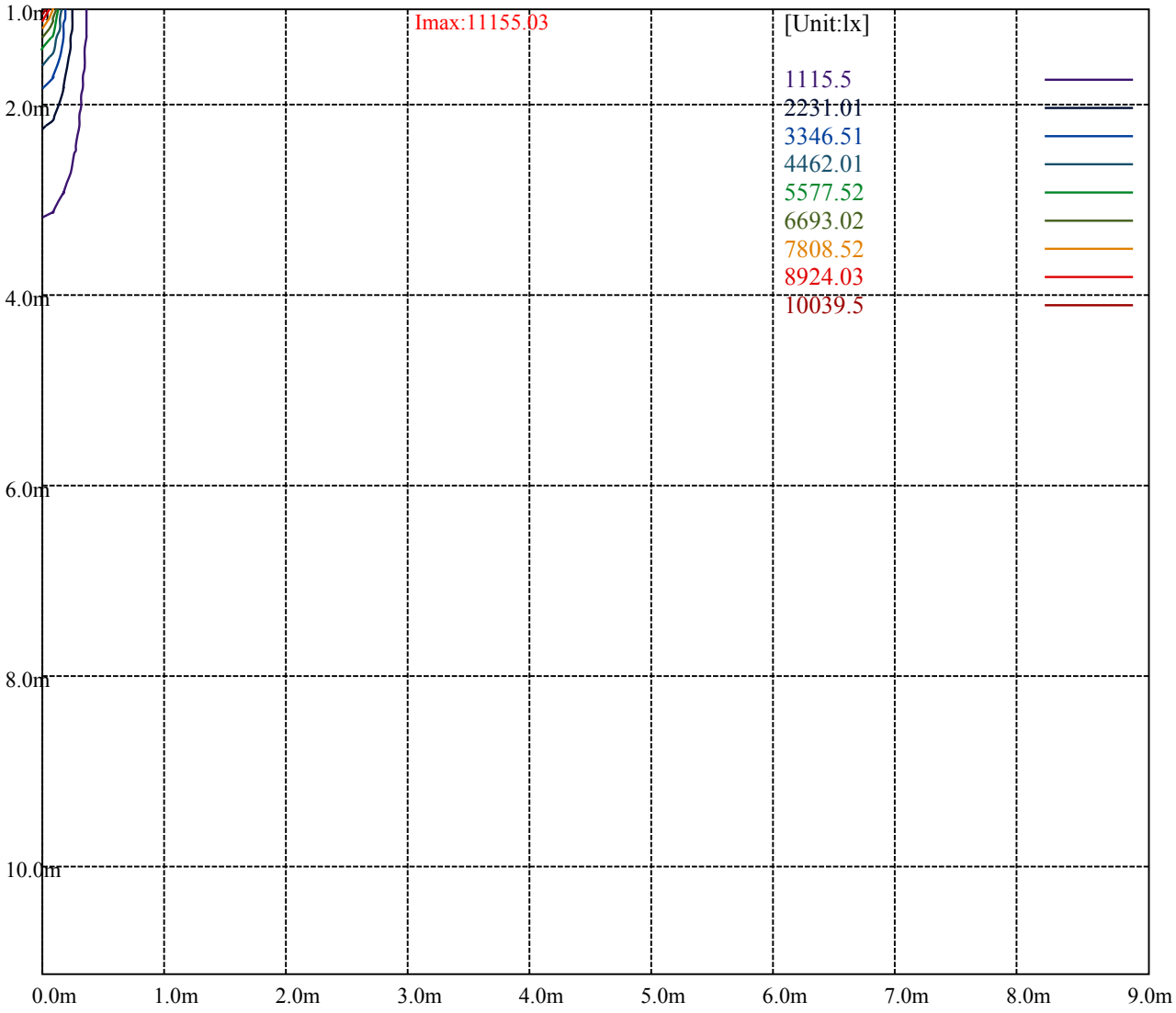





| | | |
|---|---|---|
| Equipment: GMS1980 | Date: 2024/4/17 | Operator: NT07 |
| Temperature(°C): 25.0 | Humidity(%): 60.0% | Distance(m): 7.65 |

Space ISO Lux diagram






Equipment: GMS1980
Temperature(°C): 25.0

Date: 2024/4/17
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.65

## Luminance Limitting Curve(no luminous side)



Luminance Table

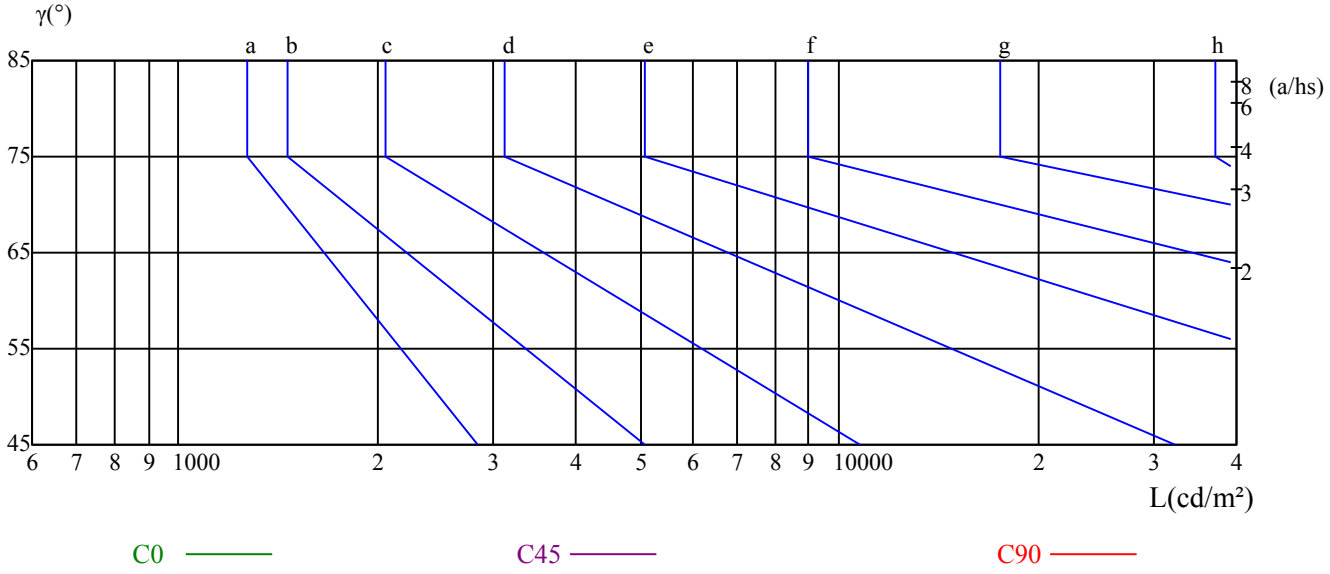
| γ | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 |
|---|---|---|---|---|---|---|---|---|---|
| C0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C90 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| L(Hor)(65) | L(Ver)(65) | L45(65) | L(Hor)(75) | L(Ver)(75) | L45(75) | L(Hor)(85) | L(Ver)(85) | L45(85) |
|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Glare Table

| Glare | Quality | Service Values Illuminance(lx) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1.15 | A | 2000 | 1000 | 500 | <=300 | | | | |
| 1.5 | B | | 2000 | 1000 | 500 | <=300 | | | |
| 1.85 | C | | | 2000 | 1000 | 500 | <=300 | | |
| 2.2 | D | | | | 2000 | 1000 | 500 | <=300 | |
| 2.55 | E | | | | | 2000 | 1000 | 500 | <=300 |
| | | a | b | c | d | e | f | g | h |

Luminance Limitting Curve

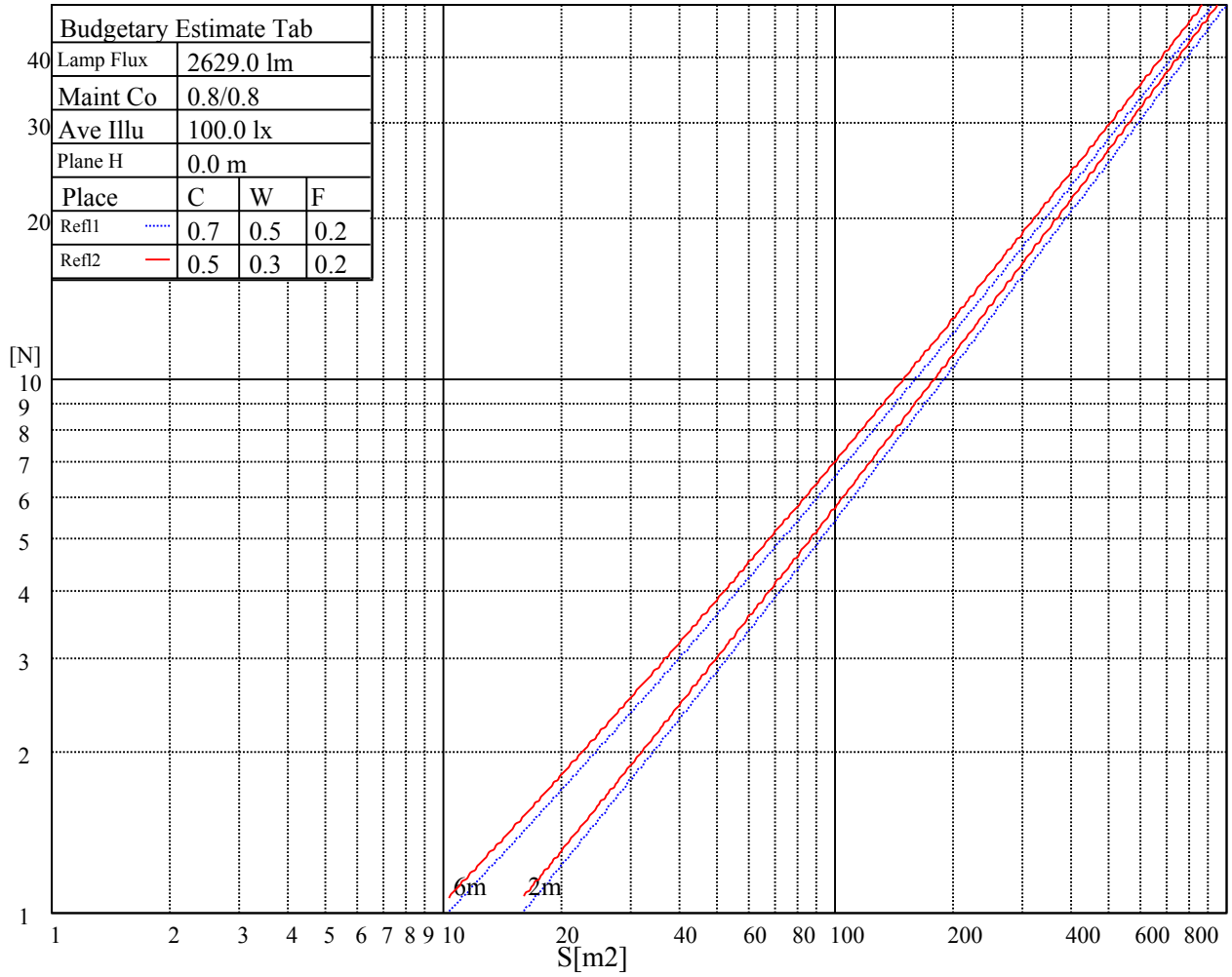


| Illumination assessment according UGR | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Rf of Ceiling | | 70 | 70 | 50 | 50 | 30 | 70 | 70 | 50 | 50 | 30 |
| Rf of Wall | | 50 | 30 | 50 | 30 | 30 | 50 | 30 | 50 | 30 | 30 |
| Rf of Floor | | 20 | 20 | 20 | 20 | 20 | 20 | 20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

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

## Budgetary Estimate Table






Equipment: GMS1980 Date: 2024/4/17 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.65

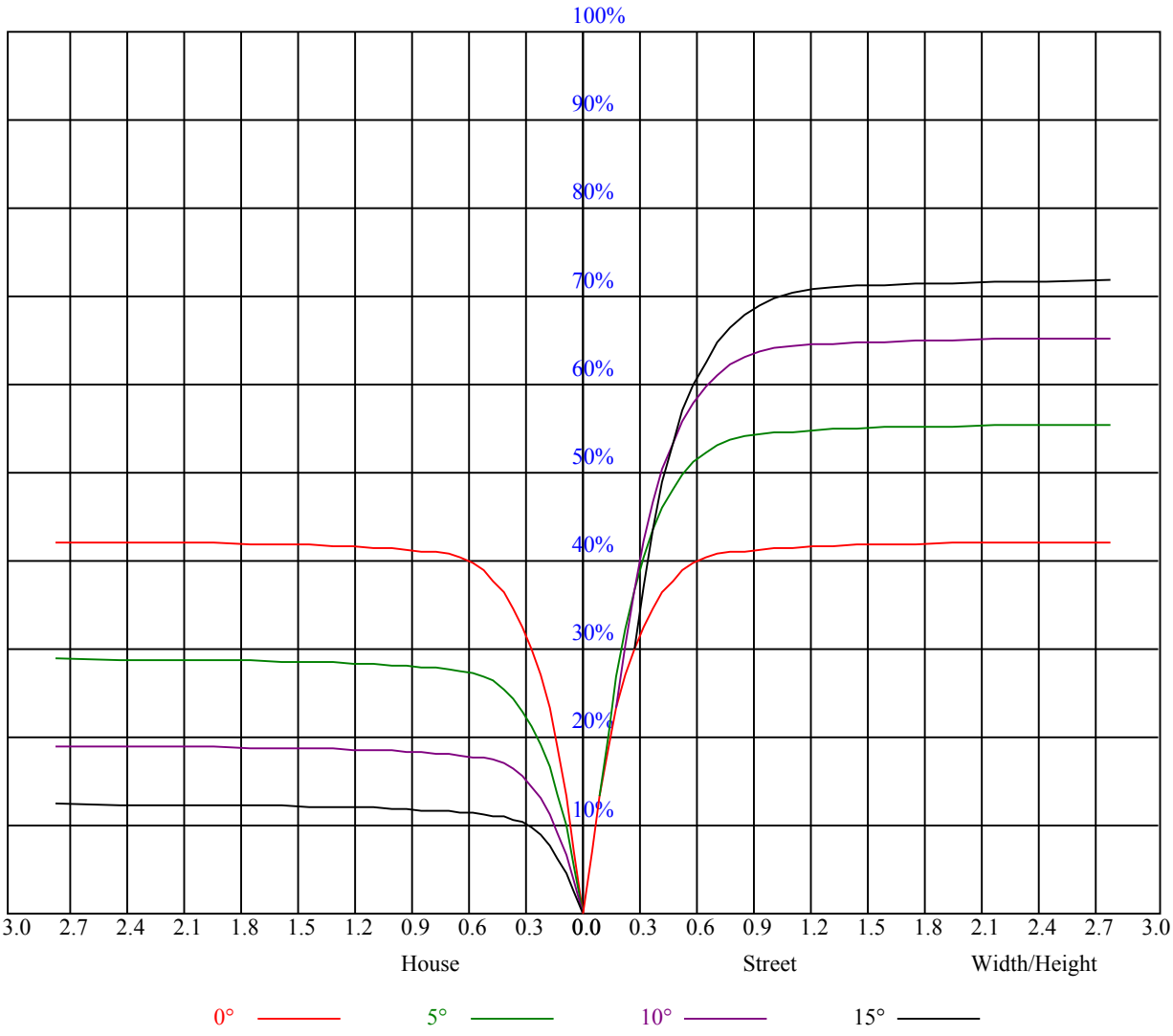
Utilization factor table for indoor luminaire



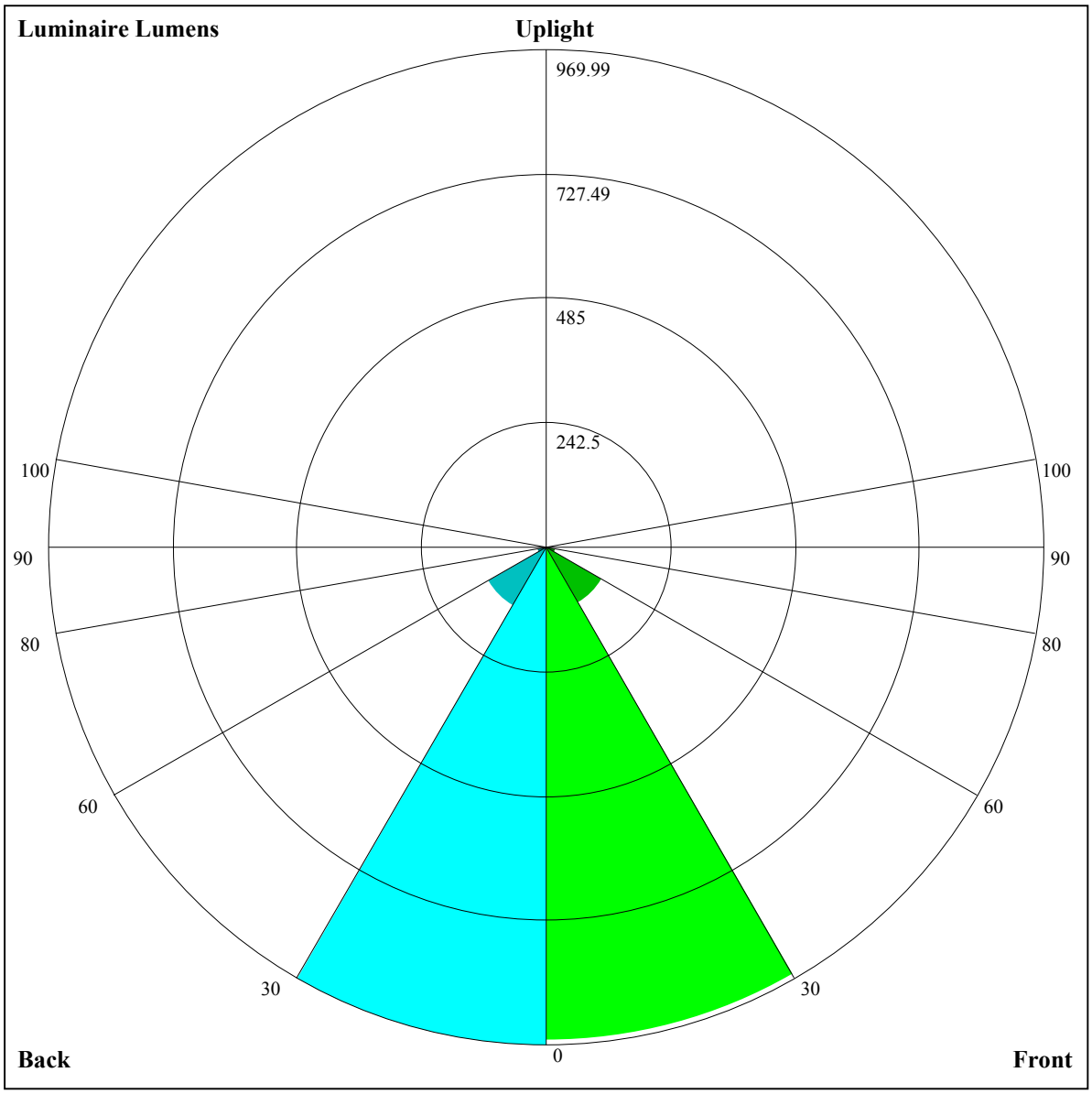
| RHOCC | 80 | | | 70 | | | 50 | | | 30 | | | 10 | | | 0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RHOW | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 0 |
| RCR | COEFFCIENTS OF UTILIZATION RHOFC=20 CU | | | | | | | | | | | | | | | |
| 0 | 1.01 | 1.01 | 1.01 | 0.99 | 0.99 | 0.99 | 0.95 | 0.95 | 0.95 | 0.91 | 0.91 | 0.91 | 0.87 | 0.87 | 0.87 | 0.85 |
| 1 | 0.95 | 0.93 | 0.91 | 0.93 | 0.92 | 0.90 | 0.90 | 0.88 | 0.87 | 0.87 | 0.86 | 0.85 | 0.84 | 0.83 | 0.82 | 0.81 |
| 2 | 0.90 | 0.87 | 0.84 | 0.88 | 0.86 | 0.83 | 0.86 | 0.83 | 0.81 | 0.83 | 0.81 | 0.80 | 0.81 | 0.79 | 0.78 | 0.77 |
| 3 | 0.85 | 0.81 | 0.79 | 0.84 | 0.81 | 0.78 | 0.82 | 0.79 | 0.77 | 0.80 | 0.77 | 0.76 | 0.78 | 0.76 | 0.74 | 0.73 |
| 4 | 0.81 | 0.77 | 0.74 | 0.80 | 0.76 | 0.74 | 0.78 | 0.75 | 0.73 | 0.77 | 0.74 | 0.72 | 0.75 | 0.73 | 0.71 | 0.70 |
| 5 | 0.77 | 0.73 | 0.70 | 0.77 | 0.73 | 0.70 | 0.75 | 0.72 | 0.69 | 0.74 | 0.71 | 0.69 | 0.73 | 0.70 | 0.68 | 0.67 |
| 6 | 0.74 | 0.70 | 0.67 | 0.74 | 0.70 | 0.67 | 0.72 | 0.69 | 0.66 | 0.71 | 0.68 | 0.66 | 0.70 | 0.68 | 0.66 | 0.65 |
| 7 | 0.71 | 0.67 | 0.64 | 0.71 | 0.67 | 0.64 | 0.70 | 0.66 | 0.64 | 0.69 | 0.66 | 0.63 | 0.68 | 0.65 | 0.63 | 0.62 |
| 8 | 0.69 | 0.64 | 0.62 | 0.68 | 0.64 | 0.62 | 0.67 | 0.64 | 0.61 | 0.66 | 0.63 | 0.61 | 0.66 | 0.63 | 0.61 | 0.60 |
| 9 | 0.66 | 0.62 | 0.59 | 0.66 | 0.62 | 0.59 | 0.65 | 0.62 | 0.59 | 0.64 | 0.61 | 0.59 | 0.64 | 0.61 | 0.59 | 0.58 |
| 10 | 0.64 | 0.60 | 0.57 | 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 |

## Coefficient Utilization Curve






| | | |
|---|---|---|
| Equipment: GMS1980 | Date: 2024/4/17 | Operator: NT07 |
| Temperature(°C): 25.0 | Humidity(%): 60.0% | Distance(m): 7.65 |




Luminaire Lumens:
FL=961.33,FM=126.08,FH=18.44,FVH=5.99
BL=969.99,BM=131.37,BH=18.67,BVH=5.97
UL=0,UH=0

BUG Rating:B2-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 | 11187.80 | 10944.94 | 10531.77 | 9949.47 | 9257.15 | 8255.83 | 7413.10 | 6562.77 | 5765.70 |
| 45.0 | 11112.31 | 11183.71 | 11015.16 | 10638.28 | 9930.16 | 9216.18 | 8448.37 | 7615.59 | 6556.92 |
| 90.0 | 11189.56 | 10990.58 | 10506.60 | 9921.38 | 9055.83 | 8275.73 | 7454.07 | 6401.83 | 5608.85 |
| 135.0 | 11130.45 | 11174.34 | 11034.48 | 10569.81 | 10012.09 | 9341.42 | 8334.83 | 7510.25 | 6463.87 |
| 180.0 | 11187.80 | 11156.20 | 10950.79 | 10424.09 | 9825.40 | 9112.60 | 8103.67 | 7255.68 | 6432.27 |
| 225.0 | 11112.31 | 10822.04 | 10233.30 | 9573.75 | 8824.67 | 8008.28 | 6957.21 | 6147.85 | 5387.64 |
| 270.0 | 11189.56 | 11149.77 | 10902.80 | 10339.81 | 9713.04 | 8976.82 | 8168.63 | 7107.62 | 6291.23 |
| 315.0 | 11130.45 | 10898.70 | 10336.30 | 9732.94 | 8987.94 | 8182.09 | 7105.28 | 6263.14 | 5483.62 |
| 360.0 | 11187.80 | 10944.94 | 10531.77 | 9949.47 | 9257.15 | 8255.83 | 7413.10 | 6562.77 | 5765.70 |

| C/γ(°) | 9.0 | 10.0 | 11.0 | 12.0 | 13.0 | 14.0 | 15.0 | 16.0 | 17.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 4877.91 | 4299.71 | 3828.60 | 3365.10 | 3057.86 | 2736.57 | 2514.77 | 2313.45 | 2096.33 |
| 45.0 | 5758.67 | 5044.70 | 4428.46 | 3835.04 | 3454.64 | 3145.06 | 2812.65 | 2585.58 | 2381.92 |
| 90.0 | 4904.83 | 4191.44 | 3751.94 | 3388.51 | 3085.95 | 2767.00 | 2543.45 | 2348.57 | 2165.98 |
| 135.0 | 5682.01 | 4994.37 | 4407.39 | 3816.31 | 3436.50 | 3107.60 | 2830.79 | 2528.82 | 2321.65 |
| 180.0 | 5471.33 | 4806.51 | 4244.70 | 3784.71 | 3297.80 | 2982.37 | 2703.21 | 2466.78 | 2211.62 |
| 225.0 | 4728.68 | 4059.18 | 3620.85 | 3258.59 | 2943.74 | 2611.33 | 2378.41 | 2127.94 | 1951.78 |
| 270.0 | 5531.02 | 4701.76 | 4157.50 | 3693.41 | 3236.94 | 2922.09 | 2661.66 | 2371.39 | 2175.34 |
| 315.0 | 4644.99 | 4108.34 | 3675.86 | 3232.26 | 2937.30 | 2616.60 | 2401.24 | 2208.11 | 2034.89 |
| 360.0 | 4877.91 | 4299.71 | 3828.60 | 3365.10 | 3057.86 | 2736.57 | 2514.77 | 2313.45 | 2096.33 |

| C/γ(°) | 18.0 | 19.0 | 20.0 | 21.0 | 22.0 | 23.0 | 24.0 | 25.0 | 26.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 1941.25 | 1798.45 | 1670.29 | 1520.47 | 1408.70 | 1160.15 | 1160.15 | 1077.75 | 960.65 |
| 45.0 | 2157.20 | 2000.94 | 1824.79 | 1693.70 | 1570.22 | 1454.34 | 1312.72 | 1199.18 | 1088.58 |
| 90.0 | 1965.24 | 1825.96 | 1693.11 | 1543.30 | 1431.52 | 1159.92 | 1159.92 | 1084.66 | 988.45 |
| 135.0 | 2145.49 | 1943.59 | 1804.89 | 1673.80 | 1523.40 | 1405.18 | 1265.90 | 1155.88 | 1049.37 |
| 180.0 | 2025.52 | 1855.22 | 1681.41 | 1560.85 | 1409.87 | 1315.06 | 1210.30 | 1093.26 | 997.87 |
| 225.0 | 1792.60 | 1625.23 | 1506.43 | 1395.82 | 1167.35 | 1167.35 | 1069.26 | 982.53 | 916.93 |
| 270.0 | 1990.99 | 1827.72 | 1653.32 | 1539.20 | 1417.47 | 1311.55 | 1186.89 | 1088.58 | 994.94 |
| 315.0 | 1838.25 | 1699.55 | 1572.56 | 1455.51 | 1160.50 | 1160.50 | 1108.53 | 1013.67 | 925.01 |
| 360.0 | 1941.25 | 1798.45 | 1670.29 | 1520.47 | 1408.70 | 1160.15 | 1160.15 | 1077.75 | 960.65 |

| C/γ(°) | 27.0 | 28.0 | 29.0 | 30.0 | 31.0 | 32.0 | 33.0 | 34.0 | 35.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 896.86 | 847.35 | 766.53 | 683.66 | 575.04 | 481.82 | 386.89 | 277.75 | 198.22 |
| 45.0 | 980.90 | 890.77 | 843.95 | 787.19 | 691.79 | 606.94 | 513.30 | 392.74 | 300.86 |
| 90.0 | 904.47 | 854.08 | 795.20 | 716.08 | 599.86 | 502.88 | 403.57 | 305.55 | 200.85 |
| 135.0 | 954.56 | 889.60 | 831.66 | 776.07 | 702.91 | 618.06 | 505.69 | 410.30 | 317.25 |
| 180.0 | 932.91 | 878.48 | 822.30 | 759.10 | 670.73 | 581.19 | 462.39 | 368.17 | 303.79 |
| 225.0 | 856.30 | 814.17 | 760.38 | 681.79 | 569.78 | 473.74 | 354.59 | 267.86 | 190.61 |
| 270.0 | 915.35 | 866.19 | 818.79 | 761.44 | 674.24 | 588.79 | 463.56 | 364.07 | 295.01 |
| 315.0 | 875.96 | 834.36 | 754.59 | 672.66 | 559.12 | 460.10 | 361.14 | 271.66 | 173.23 |
| 360.0 | 896.86 | 847.35 | 766.53 | 683.66 | 575.04 | 481.82 | 386.89 | 277.75 | 198.22 |

| C/γ(°) | 36.0 | 37.0 | 38.0 | 39.0 | 40.0 | 41.0 | 42.0 | 43.0 | 44.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 133.78 | 97.97 | 85.15 | 78.48 | 73.56 | 68.41 | 62.50 | 58.58 | 54.84 |
| 45.0 | 300.86 | 132.96 | 98.73 | 87.84 | 80.59 | 73.97 | 69.06 | 64.49 | 60.40 |
| 90.0 | 136.59 | 102.06 | 87.43 | 80.41 | 75.20 | 69.35 | 64.55 | 60.28 | 55.25 |
| 135.0 | 296.18 | 198.98 | 102.59 | 85.68 | 79.06 | 74.27 | 68.06 | 63.32 | 59.22 |
| 180.0 | 303.79 | 124.83 | 93.93 | 81.93 | 76.25 | 71.22 | 64.78 | 60.63 | 56.88 |
| 225.0 | 117.92 | 90.42 | 81.58 | 74.21 | 69.06 | 64.14 | 59.99 | 55.48 | 52.03 |
| 270.0 | 295.01 | 113.53 | 89.71 | 81.81 | 75.90 | 69.64 | 64.67 | 60.45 | 55.89 |
| 315.0 | 116.81 | 90.01 | 81.87 | 74.50 | 69.82 | 64.78 | 60.75 | 55.83 | 52.49 |
| 360.0 | 133.78 | 97.97 | 85.15 | 78.48 | 73.56 | 68.41 | 62.50 | 58.58 | 54.84 |

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 | 50.56 | 47.64 | 44.89 | 42.31 | 40.20 | 38.62 | 36.99 | 36.05 | 35.11 |
| 45.0 | 55.42 | 52.03 | 48.69 | 45.35 | 43.01 | 40.32 | 38.68 | 37.28 | 36.23 |
| 90.0 | 52.03 | 48.81 | 46.12 | 43.07 | 40.97 | 39.44 | 37.63 | 36.75 | 35.87 |
| 135.0 | 54.89 | 51.44 | 48.63 | 45.88 | 43.77 | 41.49 | 40.03 | 38.57 | 37.28 |
| 180.0 | 53.37 | 49.69 | 47.05 | 44.89 | 42.72 | 40.56 | 39.15 | 37.98 | 36.58 |
| 225.0 | 49.28 | 46.64 | 43.95 | 42.02 | 40.50 | 38.62 | 37.57 | 36.40 | 35.58 |
| 270.0 | 52.26 | 48.63 | 46.12 | 44.01 | 41.55 | 40.03 | 38.57 | 37.40 | 36.17 |
| 315.0 | 48.81 | 46.12 | 43.89 | 41.32 | 39.80 | 38.27 | 37.16 | 35.87 | 35.00 |
| 360.0 | 50.56 | 47.64 | 44.89 | 42.31 | 40.20 | 38.62 | 36.99 | 36.05 | 35.11 |

| C/γ(°) | 54.0 | 55.0 | 56.0 | 57.0 | 58.0 | 59.0 | 60.0 | 61.0 | 62.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 34.59 | 33.65 | 33.18 | 32.01 | 31.13 | 29.50 | 28.32 | 26.22 | 24.87 |
| 45.0 | 35.17 | 34.65 | 33.94 | 33.18 | 32.19 | 31.37 | 30.31 | 28.91 | 27.15 |
| 90.0 | 35.00 | 34.00 | 33.36 | 32.36 | 31.54 | 30.20 | 28.50 | 26.98 | 25.46 |
| 135.0 | 36.28 | 35.70 | 34.59 | 33.77 | 32.25 | 31.43 | 29.79 | 28.73 | 26.51 |
| 180.0 | 35.82 | 34.65 | 33.83 | 32.60 | 31.66 | 29.90 | 28.79 | 27.10 | 25.63 |
| 225.0 | 34.47 | 33.77 | 32.54 | 31.43 | 29.90 | 28.73 | 26.51 | 25.22 | 23.35 |
| 270.0 | 35.41 | 34.53 | 33.65 | 32.54 | 31.49 | 29.85 | 28.38 | 26.63 | 25.40 |
| 315.0 | 34.18 | 33.53 | 32.19 | 31.43 | 30.02 | 28.62 | 27.10 | 25.57 | 23.82 |
| 360.0 | 34.59 | 33.65 | 33.18 | 32.01 | 31.13 | 29.50 | 28.32 | 26.22 | 24.87 |

| C/γ(°) | 63.0 | 64.0 | 65.0 | 66.0 | 67.0 | 68.0 | 69.0 | 70.0 | 71.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 23.23 | 21.59 | 20.13 | 18.96 | 17.85 | 17.03 | 16.44 | 15.92 | 15.39 |
| 45.0 | 25.46 | 23.99 | 22.06 | 20.78 | 19.14 | 18.32 | 17.32 | 16.50 | 15.92 |
| 90.0 | 23.99 | 22.06 | 20.83 | 19.49 | 18.61 | 17.44 | 16.85 | 16.33 | 16.04 |
| 135.0 | 25.16 | 23.53 | 22.30 | 20.48 | 19.55 | 18.67 | 17.56 | 17.03 | 16.56 |
| 180.0 | 23.58 | 22.24 | 20.83 | 19.49 | 18.38 | 17.44 | 16.68 | 16.15 | 15.68 |
| 225.0 | 21.77 | 20.13 | 19.14 | 17.85 | 17.09 | 16.50 | 15.80 | 15.39 | 14.98 |
| 270.0 | 23.12 | 22.00 | 20.48 | 19.14 | 18.14 | 17.32 | 16.68 | 16.04 | 15.57 |
| 315.0 | 22.18 | 20.78 | 19.49 | 18.55 | 17.62 | 16.85 | 16.27 | 15.92 | 15.45 |
| 360.0 | 23.23 | 21.59 | 20.13 | 18.96 | 17.85 | 17.03 | 16.44 | 15.92 | 15.39 |

| C/γ(°) | 72.0 | 73.0 | 74.0 | 75.0 | 76.0 | 77.0 | 78.0 | 79.0 | 80.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 15.04 | 14.69 | 14.40 | 13.99 | 13.87 | 13.99 | 14.10 | 14.34 | 14.10 |
| 45.0 | 15.45 | 15.10 | 14.57 | 14.28 | 13.99 | 13.64 | 13.23 | 12.93 | 12.64 |
| 90.0 | 16.21 | 16.68 | 17.09 | 17.50 | 17.56 | 17.56 | 17.26 | 16.74 | 15.92 |
| 135.0 | 16.39 | 17.03 | 17.79 | 18.67 | 19.02 | 19.25 | 19.43 | 18.55 | 16.50 |
| 180.0 | 15.22 | 14.81 | 14.46 | 13.99 | 13.64 | 13.28 | 12.93 | 12.52 | 12.23 |
| 225.0 | 14.63 | 14.22 | 13.87 | 13.52 | 13.17 | 12.82 | 12.52 | 12.17 | 11.82 |
| 270.0 | 15.22 | 14.81 | 14.34 | 14.05 | 13.75 | 13.69 | 13.87 | 14.10 | 14.10 |
| 315.0 | 15.10 | 14.75 | 14.40 | 14.10 | 14.05 | 14.16 | 14.57 | 14.51 | 14.05 |
| 360.0 | 15.04 | 14.69 | 14.40 | 13.99 | 13.87 | 13.99 | 14.10 | 14.34 | 14.10 |

| C/γ(°) | 81.0 | 82.0 | 83.0 | 84.0 | 85.0 | 86.0 | 87.0 | 88.0 | 89.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 12.87 | 11.65 | 11.24 | 10.94 | 10.71 | 10.42 | 10.07 | 9.83 | 9.66 |
| 45.0 | 12.29 | 12.00 | 11.53 | 11.24 | 10.89 | 10.65 | 10.30 | 10.01 | 9.83 |
| 90.0 | 13.64 | 11.76 | 11.35 | 11.00 | 10.71 | 10.36 | 10.07 | 9.83 | 9.66 |
| 135.0 | 14.16 | 12.52 | 11.65 | 11.24 | 11.00 | 10.48 | 10.18 | 9.95 | 9.71 |
| 180.0 | 11.94 | 11.53 | 11.24 | 10.94 | 10.53 | 10.24 | 9.95 | 9.66 | 9.48 |
| 225.0 | 11.53 | 11.12 | 10.83 | 10.53 | 10.18 | 9.95 | 9.71 | 9.48 | 9.54 |
| 270.0 | 13.52 | 12.00 | 11.18 | 10.89 | 10.65 | 10.24 | 9.89 | 9.71 | 9.48 |
| 315.0 | 12.23 | 11.35 | 10.94 | 10.65 | 10.48 | 10.12 | 9.83 | 9.60 | 9.54 |
| 360.0 | 12.87 | 11.65 | 11.24 | 10.94 | 10.71 | 10.42 | 10.07 | 9.83 | 9.66 |

Intensity data(cd)



| C/γ(°) | 90.0 |
|---|---|
| 0.0 | 9.60 |
| 45.0 | 9.60 |
| 90.0 | 9.48 |
| 135.0 | 9.48 |
| 180.0 | 9.54 |
| 225.0 | 9.54 |
| 270.0 | 9.54 |
| 315.0 | 9.60 |
| 360.0 | 9.60 |