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Address:380JinOu Road,GaoXin Zone,Jiang Men City,Guangdong,China

## NATA

LumCAT: 2-1793-N
Luminaire: 92.70.129.00
Report No: NATA0100
Test No: GC2019012502
LampCAT: CREE CXB1830
Lamp flux(lm): 2906.0
Number of Lamps: 1
Length(mm): 69
Phm Type: C

Voltage(V): 35.5000
Current(A): 0.6000
Power (W): 21.3000
PF: 0.0000
Ballast type: DC
Width(mm): 69
Height(mm): 0

## Photometric Results

Lumens(lm): 2404.41
Efficiency(%): 82.74%
Lumens(lm)/Power(W): 113.03
Central intensity(cd): 13826.250
Maximum intensity(cd): 13826.250
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=17.8
[C90/270]Total=17.8
Field angle(10%Imax): [C0/180]Total=43.2
[C90/270]Total=43.2
Maximum s/h(1/2): C0_180=0.30 C90_270=0.30
Maximum s/h(1/4): C0_180=0.32 C90_270=0.32
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 82.85%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.953%

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 0.0 | 13826.250 | 3.308 | 3.308 | .114% | .138% |
| 1.0 | 13683.516 | 26.188 | 29.496 | .901% | 1.227% |
| 2.0 | 13224.375 | 50.611 | 80.107 | 1.742% | 3.332% |
| 3.0 | 12470.695 | 71.572 | 151.679 | 2.463% | 6.308% |
| 4.0 | 11796.891 | 90.241 | 241.92 | 3.105% | 10.062% |
| 5.0 | 10826.086 | 103.471 | 345.391 | 3.561% | 14.365% |
| 6.0 | 9890.016 | 113.366 | 458.757 | 3.901% | 19.080% |
| 7.0 | 8876.672 | 118.631 | 577.388 | 4.082% | 24.014% |
| 8.0 | 7838.086 | 119.624 | 697.011 | 4.116% | 28.989% |
| 9.0 | 6800.625 | 116.663 | 813.674 | 4.015% | 33.841% |
| 10.0 | 5851.336 | 111.424 | 925.098 | 3.834% | 38.475% |
| 11.0 | 5019.188 | 105.023 | 1030.121 | 3.614% | 42.843% |
| 12.0 | 4291.242 | 97.839 | 1127.96 | 3.367% | 46.912% |
| 13.0 | 3673.898 | 90.629 | 1218.589 | 3.119% | 50.681% |
| 14.0 | 3152.180 | 83.625 | 1302.214 | 2.878% | 54.160% |
| 15.0 | 2791.125 | 79.219 | 1381.433 | 2.726% | 57.454% |
| 16.0 | 2493.422 | 75.368 | 1456.801 | 2.594% | 60.589% |
| 17.0 | 2180.672 | 69.916 | 1526.717 | 2.406% | 63.497% |
| 18.0 | 1948.078 | 66.015 | 1592.732 | 2.272% | 66.242% |
| 19.0 | 1773.773 | 63.327 | 1656.059 | 2.179% | 68.876% |
| 20.0 | 1600.453 | 60.027 | 1716.086 | 2.066% | 71.373% |
| 21.0 | 1452.797 | 57.093 | 1773.179 | 1.965% | 73.747% |
| 22.0 | 1336.148 | 54.889 | 1828.068 | 1.889% | 76.030% |
| 23.0 | 1217.138 | 52.152 | 1880.22 | 1.795% | 78.199% |
| 24.0 | 1134.942 | 50.622 | 1930.842 | 1.742% | 80.304% |
| 25.0 | 1073.180 | 49.736 | 1980.578 | 1.711% | 82.373% |
| 26.0 | 1006.545 | 48.387 | 2028.965 | 1.665% | 84.385% |
| 27.0 | 926.972 | 46.149 | 2075.114 | 1.588% | 86.305% |
| 28.0 | 843.441 | 43.423 | 2118.537 | 1.494% | 88.111% |
| 29.0 | 734.885 | 39.070 | 2157.606 | 1.344% | 89.736% |
| 30.0 | 627.145 | 34.387 | 2191.993 | 1.183% | 91.166% |
| 31.0 | 520.467 | 29.396 | 2221.389 | 1.012% | 92.388% |
| 32.0 | 409.781 | 23.813 | 2245.202 | .819% | 93.379% |
| 33.0 | 315.506 | 18.844 | 2264.046 | .648% | 94.162% |
| 34.0 | 229.521 | 14.075 | 2278.12 | .484% | 94.748% |
| 35.0 | 159.630 | 10.041 | 2288.161 | .346% | 95.165% |
| 36.0 | 101.672 | 6.553 | 2294.714 | .226% | 95.438% |
| 37.0 | 77.934 | 5.143 | 2299.858 | .177% | 95.652% |

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 38.0 | 65.377 | 4.414 | 2304.271 | .152% | 95.835% |
| 39.0 | 58.605 | 4.044 | 2308.316 | .139% | 96.004% |
| 40.0 | 53.409 | 3.765 | 2312.081 | .130% | 96.160% |
| 41.0 | 48.565 | 3.494 | 2315.575 | .120% | 96.305% |
| 42.0 | 44.170 | 3.241 | 2318.816 | .112% | 96.440% |
| 43.0 | 40.359 | 3.018 | 2321.834 | .104% | 96.566% |
| 44.0 | 36.963 | 2.816 | 2324.65 | .097% | 96.683% |
| 45.0 | 33.905 | 2.629 | 2327.279 | .090% | 96.792% |
| 46.0 | 31.598 | 2.493 | 2329.771 | .086% | 96.896% |
| 47.0 | 29.475 | 2.364 | 2332.135 | .081% | 96.994% |
| 48.0 | 27.766 | 2.263 | 2334.398 | .078% | 97.088% |
| 49.0 | 26.416 | 2.186 | 2336.584 | .075% | 97.179% |
| 50.0 | 25.102 | 2.109 | 2338.693 | .073% | 97.267% |
| 51.0 | 24.131 | 2.057 | 2340.75 | .071% | 97.352% |
| 52.0 | 23.421 | 2.024 | 2342.774 | .070% | 97.437% |
| 53.0 | 22.662 | 1.985 | 2344.758 | .068% | 97.519% |
| 54.0 | 22.148 | 1.965 | 2346.723 | .068% | 97.601% |
| 55.0 | 21.741 | 1.953 | 2348.676 | .067% | 97.682% |
| 56.0 | 21.382 | 1.944 | 2350.62 | .067% | 97.763% |
| 57.0 | 21.066 | 1.937 | 2352.557 | .067% | 97.844% |
| 58.0 | 20.735 | 1.928 | 2354.486 | .066% | 97.924% |
| 59.0 | 20.496 | 1.927 | 2356.412 | .066% | 98.004% |
| 60.0 | 20.208 | 1.919 | 2358.331 | .066% | 98.084% |
| 61.0 | 20.032 | 1.921 | 2360.253 | .066% | 98.164% |
| 62.0 | 19.835 | 1.921 | 2362.173 | .066% | 98.244% |
| 63.0 | 19.624 | 1.917 | 2364.091 | .066% | 98.323% |
| 64.0 | 19.336 | 1.906 | 2365.997 | .066% | 98.403% |
| 65.0 | 18.921 | 1.881 | 2367.877 | .065% | 98.481% |
| 66.0 | 18.436 | 1.847 | 2369.724 | .064% | 98.558% |
| 67.0 | 17.958 | 1.813 | 2371.537 | .062% | 98.633% |
| 68.0 | 17.494 | 1.779 | 2373.315 | .061% | 98.707% |
| 69.0 | 17.023 | 1.743 | 2375.058 | .060% | 98.779% |
| 70.0 | 16.622 | 1.713 | 2376.771 | .059% | 98.851% |
| 71.0 | 16.207 | 1.680 | 2378.451 | .058% | 98.921% |
| 72.0 | 15.771 | 1.645 | 2380.096 | .057% | 98.989% |
| 73.0 | 15.377 | 1.613 | 2381.709 | .055% | 99.056% |
| 74.0 | 15.026 | 1.584 | 2383.293 | .055% | 99.122% |
| 75.0 | 14.639 | 1.551 | 2384.843 | .053% | 99.186% |

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 76.0 | 14.280 | 1.519 | 2386.363 | .052% | 99.250% |
| 77.0 | 13.992 | 1.495 | 2387.858 | .051% | 99.312% |
| 78.0 | 13.669 | 1.466 | 2389.324 | .050% | 99.373% |
| 79.0 | 13.388 | 1.441 | 2390.765 | .050% | 99.433% |
| 80.0 | 13.099 | 1.415 | 2392.18 | .049% | 99.491% |
| 81.0 | 12.825 | 1.389 | 2393.569 | .048% | 99.549% |
| 82.0 | 12.579 | 1.366 | 2394.935 | .047% | 99.606% |
| 83.0 | 12.319 | 1.341 | 2396.276 | .046% | 99.662% |
| 84.0 | 12.038 | 1.313 | 2397.589 | .045% | 99.716% |
| 85.0 | 11.841 | 1.294 | 2398.882 | .045% | 99.770% |
| 86.0 | 11.658 | 1.275 | 2400.157 | .044% | 99.823% |
| 87.0 | 11.475 | 1.257 | 2401.414 | .043% | 99.876% |
| 88.0 | 11.271 | 1.235 | 2402.649 | .043% | 99.927% |
| 89.0 | 10.793 | 1.183 | 2403.833 | .041% | 99.976% |
| 90.0 | 10.463 | 0.574 | 2404.406 | .020% | 100.000% |

## Zonal flux distribution table



ZONAL LUMEN SUMMARY

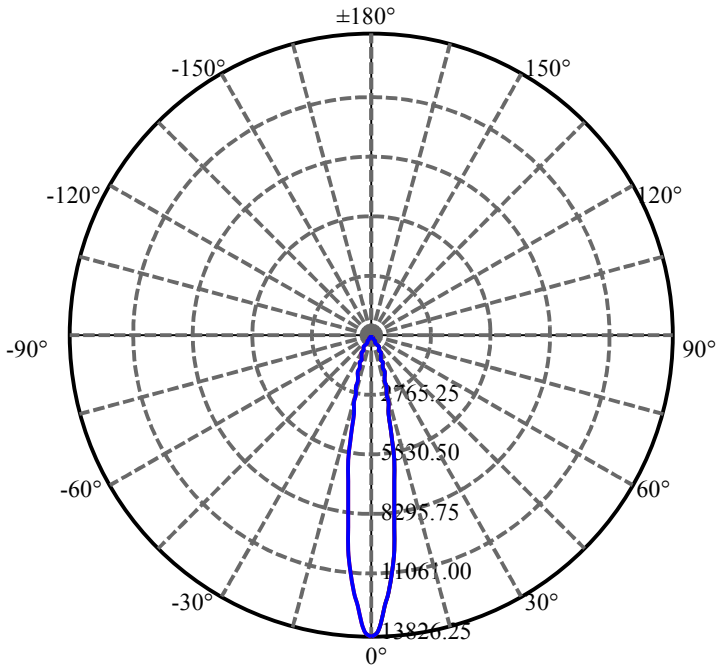
| Zone | Lumens | %Lamp | %Fixt |
|---|---|---|---|
| 0-30 | 2191.99 | 75.43% | 91.17% |
| 0-40 | 2312.08 | 79.56% | 96.16% |
| 0-60 | 2358.33 | 81.15% | 98.08% |
| 0-90 | 2403.83 | 82.72% | 99.98% |
| 0-120 | 2403.83 | 82.72% | 99.98% |
| 0-180 | 2404.41 | 82.74% | 100.00% |
| 60-90 | 47.42 | 1.63% | 1.97% |
| 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% |
| 0-23.86 | 1923.53 | 66.19% | 80.00% |

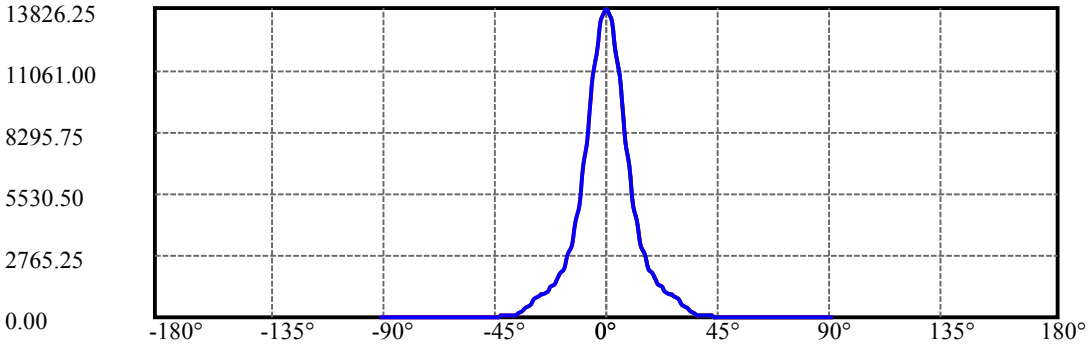
ZONAL LUMEN SUMMARY

| | |
|---|---|
| 0-10 | 925.10 |
| 10-20 | 790.99 |
| 20-30 | 475.91 |
| 30-40 | 120.09 |
| 40-50 | 26.61 |
| 50-60 | 19.64 |
| 60-70 | 18.44 |
| 70-80 | 15.41 |
| 80-90 | 11.65 |
| 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:

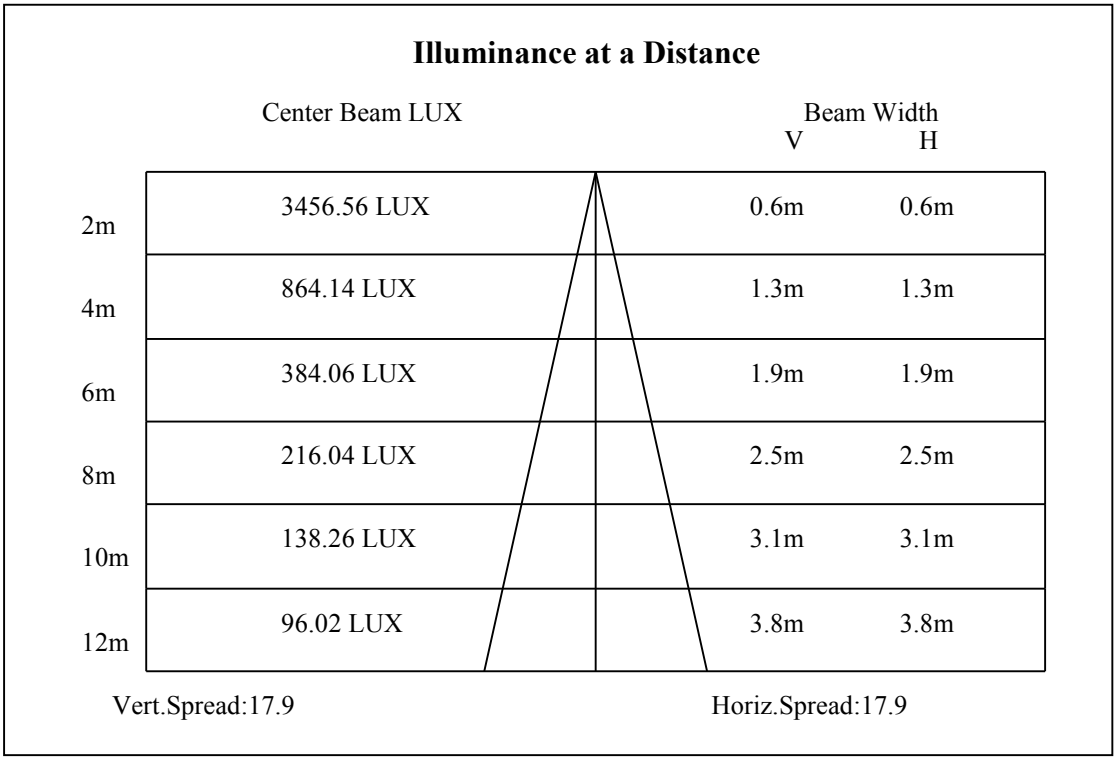
C90/C270:

Field angle(10%Imax):C0/180Left:21.6 Right:21.6
:C90/270Left:21.6 Right:21.6

Beam Angle(50%Imax):C0/180Left:8.9 Right:8.9
:C90/270Left:8.9 Right:8.9

Lux distance Curve

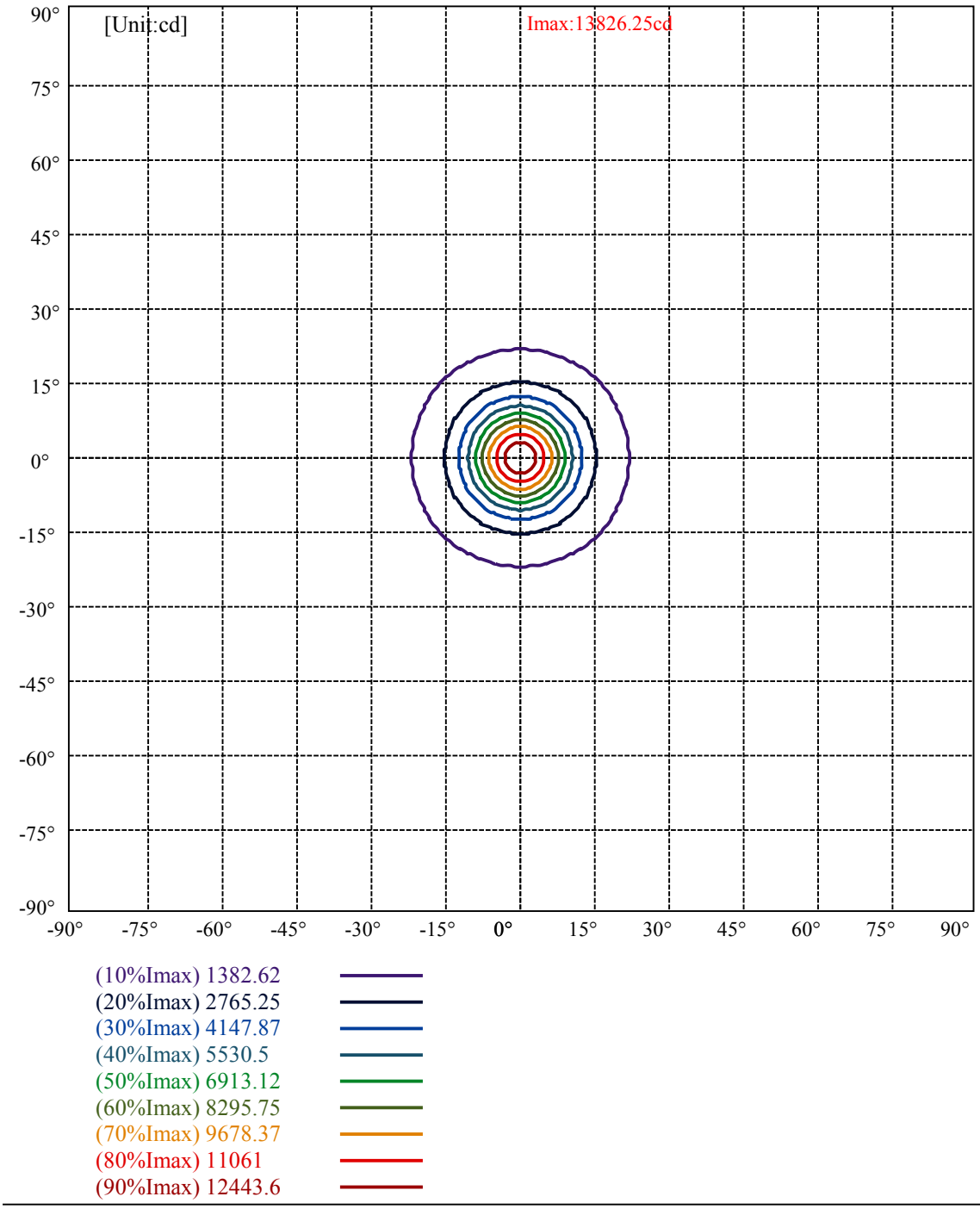





Equipment: GMS1980 Date: 2019/1/25 Operator: NT07
Temperature(°C): 10.0 Humidity(%): 65.0% Distance(m): 7.50

ISO-Intensity(V-H)





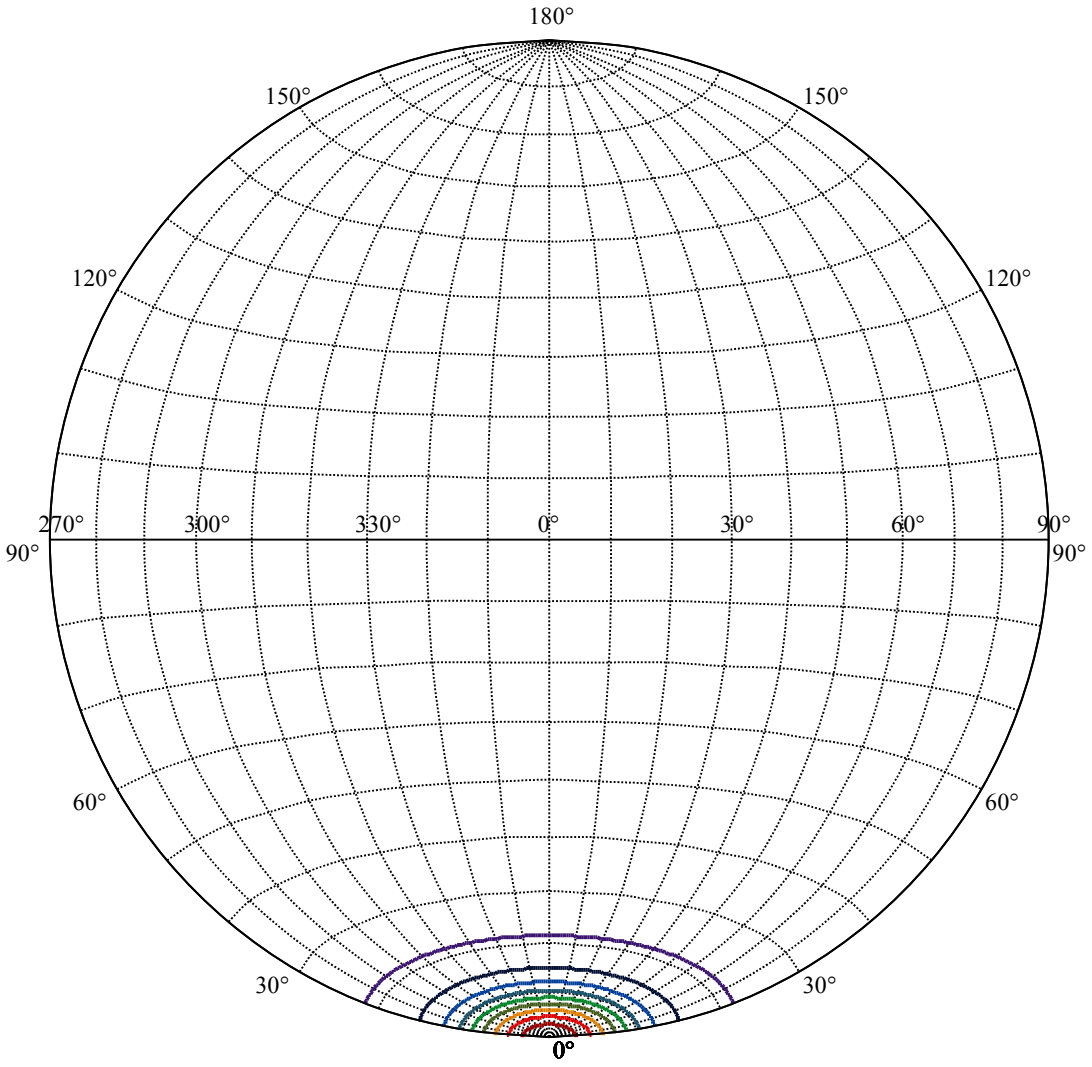

Equipment: GMS1980
Temperature(°C): 10.0

Date: 2019/1/25
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

ISO candela diagram on circular web






House [Unit:cd] Road

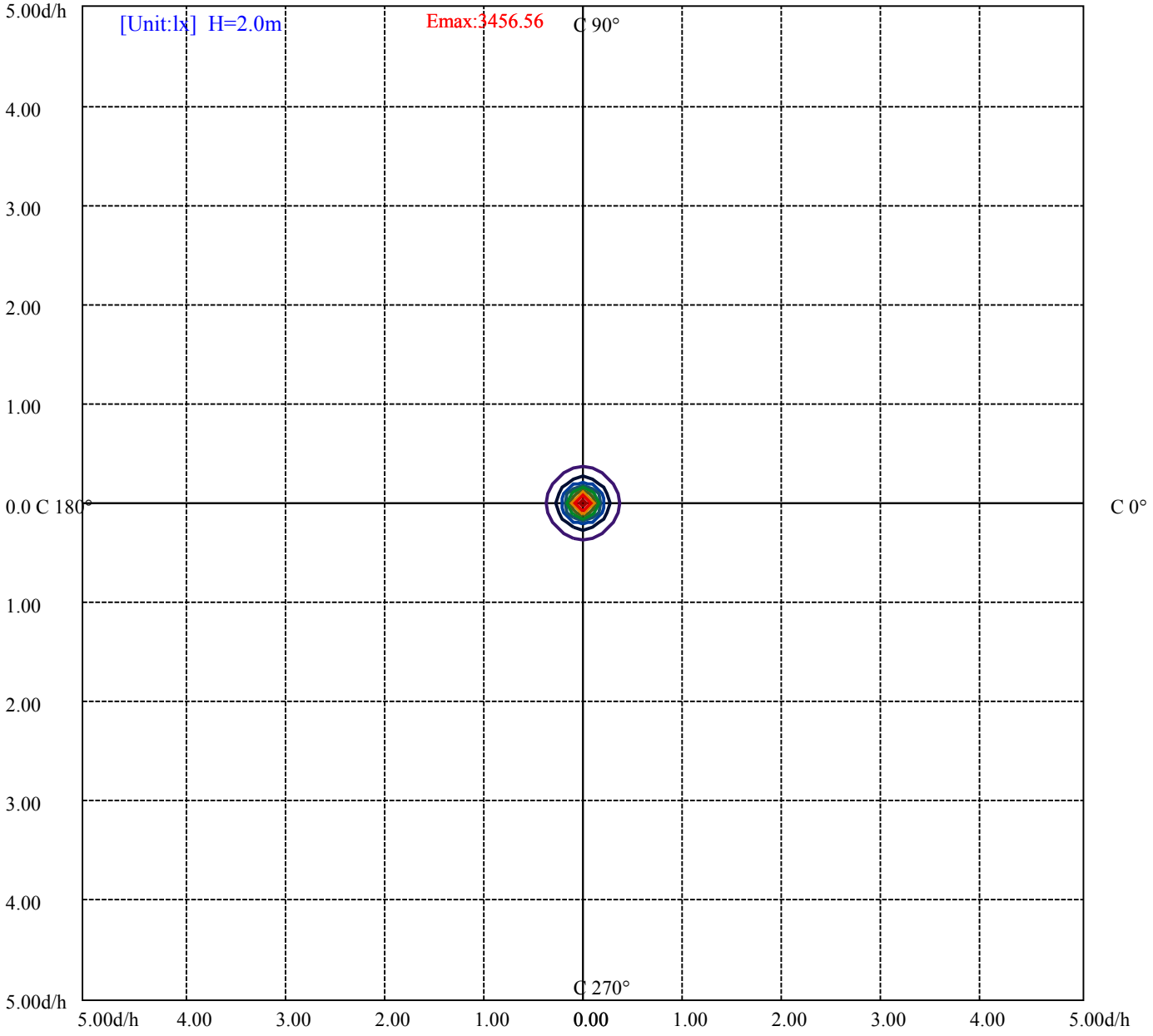
Imax:13826.25

(10%Imax) 1382.62
(20%Imax) 2765.25
(30%Imax) 4147.87
(40%Imax) 5530.5
(50%Imax) 6913.12
(60%Imax) 8295.75
(70%Imax) 9678.37
(80%Imax) 11061
(90%Imax) 12443.6

Equipment: GMS1980 Date: 2019/1/25 Operator: NT07
Temperature(°C): 10.0 Humidity(%): 65.0% Distance(m): 7.50

## ISO illuminance diagram



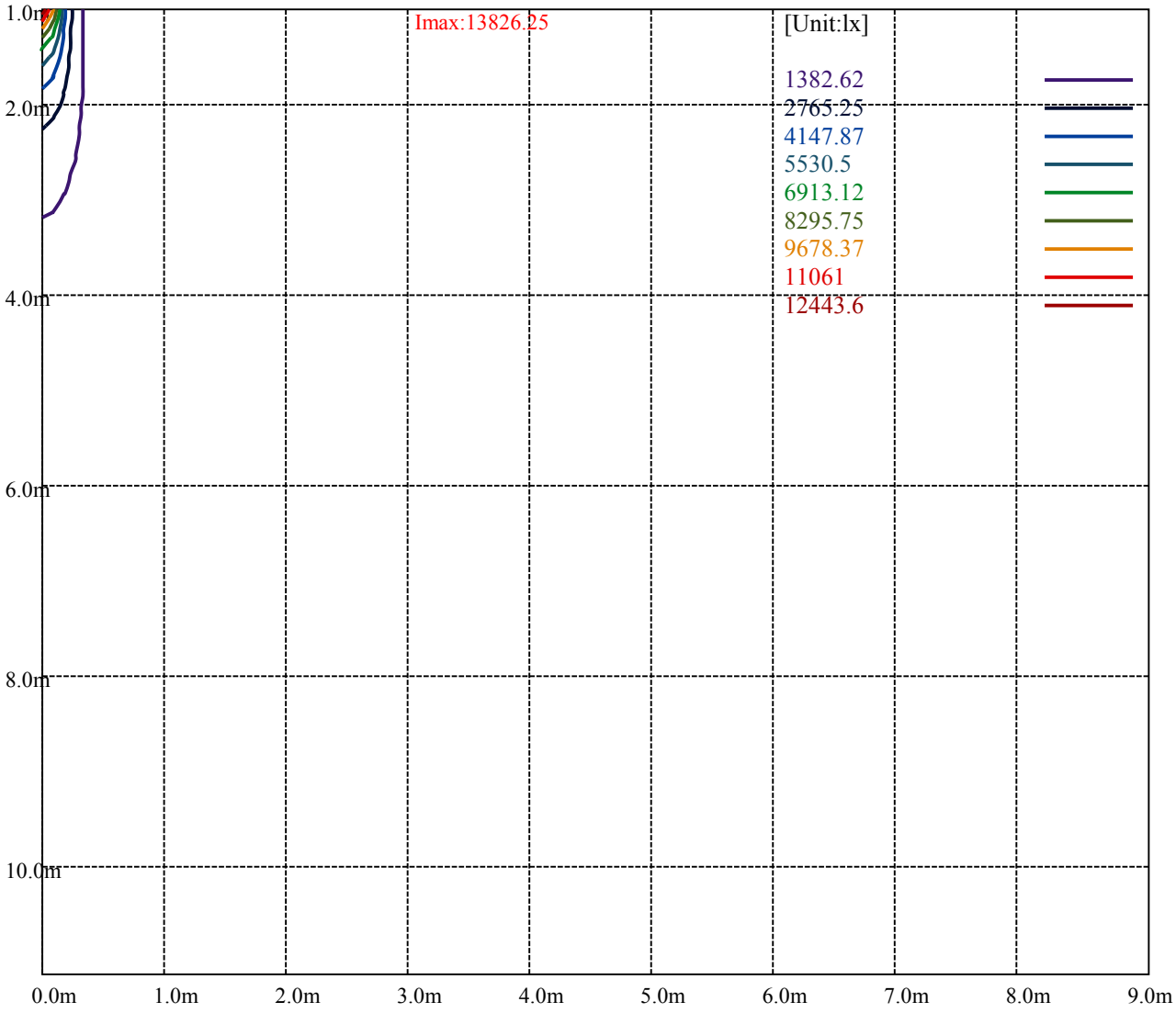



(10%Emax) 345.655
(20%Emax) 691.3125
(30%Emax) 1036.968
(40%Emax) 1382.623
(50%Emax) 1728.277
(60%Emax) 2073.935
(70%Emax) 2419.59
(80%Emax) 2765.25
(90%Emax) 3110.9

Equipment: GMS1980
Temperature(°C): 10.0
Date: 2019/1/25
Humidity(%): 65.0%
Operator: NT07
Distance(m): 7.50

## Space ISO Lux diagram






Equipment: GMS1980
Temperature(°C): 10.0

Date: 2019/1/25
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

## Luminance Limitting Curve(no luminous side)



Luminance Table

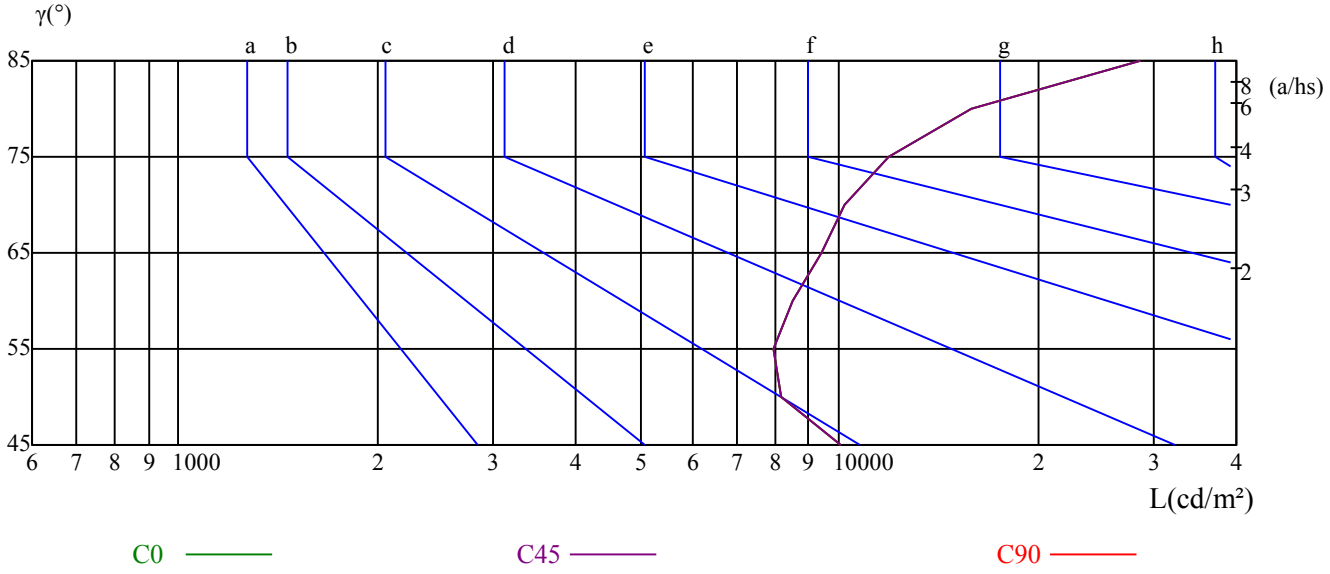
| γ | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 |
|---|---|---|---|---|---|---|---|---|---|
| C0 | 10071 | 8202 | 7961 | 8489 | 9404 | 10208 | 11880 | 15844 | 28535 |
| C45 | 10071 | 8202 | 7961 | 8489 | 9404 | 10208 | 11880 | 15844 | 28535 |
| C90 | 10071 | 8202 | 7961 | 8489 | 9404 | 10208 | 11880 | 15844 | 28535 |

| L(Hor)(65) | L(Ver)(65) | L45(65) | L(Hor)(75) | L(Ver)(75) | L45(75) | L(Hor)(85) | L(Ver)(85) | L45(85) |
|---|---|---|---|---|---|---|---|---|
| 9404 | 9404 | 9404 | 11880 | 11880 | 11880 | 28535 | 28535 | 28535 |

Glare Table

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

Luminance Limitting Curve



UGR Glare



Illumination assessment according UGR

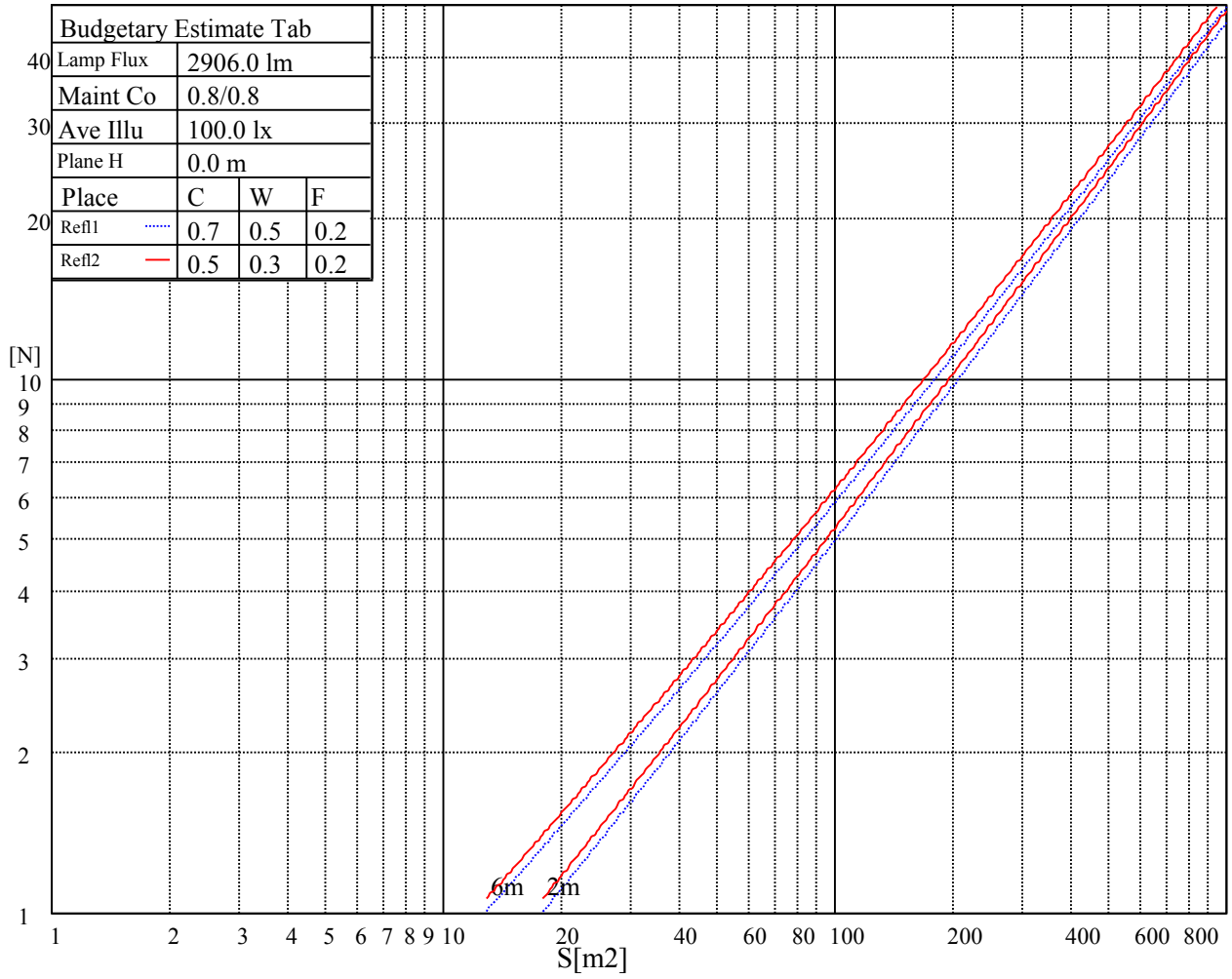
| Rf of Ceiling | | 70 | 70 | 50 | 50 | 30 | 70 | 70 | 50 | 50 | 30 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Rf of Wall | | 50 | 30 | 50 | 30 | 30 | 50 | 30 | 50 | 30 | 30 |
| Rf of Floor | | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Room dimensions | | Viewed crosswise | | | | | Viewed endwise | | | | |
| X | Y | | | | | | | | | | |
| 2H | 2H | 7.16 | 8.09 | 7.52 | 8.40 | 8.72 | 7.09 | 8.03 | 7.46 | 8.34 | 8.66 |
| | 3H | 9.81 | 10.64 | 10.20 | 10.97 | 11.34 | 9.83 | 10.65 | 10.21 | 10.99 | 11.36 |
| | 4H | 11.09 | 11.86 | 11.50 | 12.21 | 12.60 | 11.14 | 11.91 | 11.55 | 12.26 | 12.65 |
| | 6H | 12.49 | 13.19 | 12.91 | 13.56 | 13.96 | 12.57 | 13.27 | 12.99 | 13.65 | 14.04 |
| | 8H | 13.26 | 13.92 | 13.70 | 14.31 | 14.72 | 13.36 | 14.02 | 13.80 | 14.41 | 14.82 |
| | 12H | 14.57 | 15.20 | 15.01 | 15.58 | 16.01 | 14.70 | 15.33 | 15.14 | 15.71 | 16.14 |
| 4H | 2H | 7.97 | 8.74 | 8.38 | 9.09 | 9.48 | 7.93 | 8.69 | 8.33 | 9.05 | 9.44 |
| | 3H | 10.83 | 11.46 | 11.24 | 11.87 | 12.27 | 10.84 | 11.47 | 11.26 | 11.88 | 12.28 |
| | 4H | 12.27 | 12.83 | 12.70 | 13.25 | 13.70 | 12.31 | 12.87 | 12.75 | 13.30 | 13.75 |
| | 6H | 13.74 | 14.22 | 14.21 | 14.67 | 15.15 | 13.82 | 14.30 | 14.29 | 14.75 | 15.22 |
| | 8H | 14.64 | 15.09 | 15.12 | 15.54 | 16.01 | 14.73 | 15.18 | 15.21 | 15.63 | 16.11 |
| | 12H | 15.93 | 16.31 | 16.42 | 16.80 | 17.28 | 16.04 | 16.43 | 16.54 | 16.92 | 17.40 |
| 8H | 4H | 12.82 | 13.27 | 13.29 | 13.72 | 14.19 | 12.85 | 13.30 | 13.33 | 13.75 | 14.23 |
| | 6H | 14.59 | 14.94 | 15.10 | 15.45 | 15.93 | 14.65 | 15.01 | 15.16 | 15.51 | 16.00 |
| | 8H | 15.67 | 15.99 | 16.21 | 16.51 | 17.01 | 15.76 | 16.07 | 16.29 | 16.60 | 17.09 |
| | 12H | 17.20 | 17.47 | 17.73 | 17.97 | 18.55 | 17.31 | 17.57 | 17.83 | 18.07 | 18.66 |
| 12H | 4H | 12.95 | 13.33 | 13.44 | 13.82 | 14.30 | 12.98 | 13.37 | 13.47 | 13.85 | 14.33 |
| | 6H | 15.06 | 15.15 | 15.37 | 15.62 | 16.17 | 15.12 | 15.21 | 15.43 | 15.68 | 16.23 |
| | 8H | 16.05 | 16.32 | 16.57 | 16.81 | 17.40 | 16.12 | 16.39 | 16.65 | 16.89 | 17.47 |

Variation with the observer position at spacings:

| | | |
|---|---|---|
| S = 1.0H | 3.6/-1.9 | 3.6/-1.9 |
| S = 1.5H | 4.4/-1.6 | 4.4/-1.6 |
| S = 2.0H | 5.0/-1.3 | 5.0/-1.3 |
| Standard tables: | BKBF | BKBF |
| Uncorrected UGR | 3.1 | 3.1 |

## Budgetary Estimate Table






Equipment: GMS1980 Date: 2019/1/25 Operator: NT07
Temperature(°C): 10.0 Humidity(%): 65.0% Distance(m): 7.50

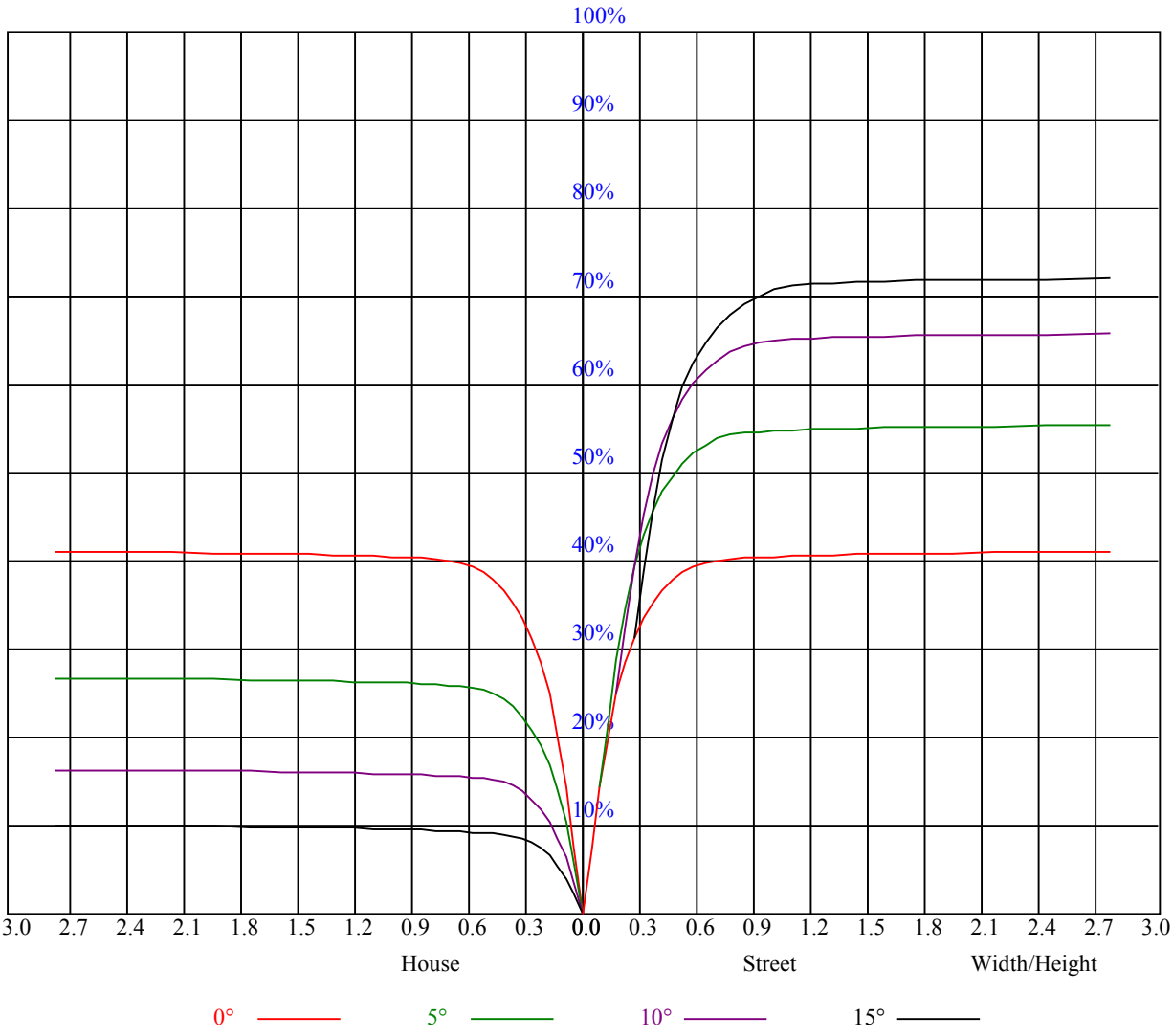
# Utilization factor table for indoor luminaire



| 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 | 0.99 | 0.99 | 0.99 | 0.96 | 0.96 | 0.96 | 0.92 | 0.92 | 0.92 | 0.88 | 0.88 | 0.88 | 0.85 | 0.85 | 0.85 | 0.83 |
| 1 | 0.93 | 0.91 | 0.89 | 0.91 | 0.89 | 0.88 | 0.88 | 0.86 | 0.85 | 0.85 | 0.84 | 0.83 | 0.82 | 0.81 | 0.80 | 0.79 |
| 2 | 0.88 | 0.85 | 0.83 | 0.87 | 0.84 | 0.82 | 0.84 | 0.82 | 0.80 | 0.82 | 0.80 | 0.79 | 0.79 | 0.78 | 0.77 | 0.76 |
| 3 | 0.84 | 0.81 | 0.78 | 0.83 | 0.80 | 0.78 | 0.81 | 0.78 | 0.76 | 0.79 | 0.77 | 0.75 | 0.77 | 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 | 0.76 | 0.74 | 0.72 | 0.75 | 0.73 | 0.71 | 0.70 |
| 5 | 0.77 | 0.74 | 0.71 | 0.77 | 0.73 | 0.71 | 0.75 | 0.72 | 0.70 | 0.74 | 0.72 | 0.70 | 0.73 | 0.71 | 0.69 | 0.68 |
| 6 | 0.75 | 0.71 | 0.68 | 0.74 | 0.71 | 0.68 | 0.73 | 0.70 | 0.68 | 0.72 | 0.69 | 0.67 | 0.71 | 0.69 | 0.67 | 0.66 |
| 7 | 0.72 | 0.69 | 0.66 | 0.72 | 0.68 | 0.66 | 0.71 | 0.68 | 0.65 | 0.70 | 0.67 | 0.65 | 0.69 | 0.67 | 0.65 | 0.64 |
| 8 | 0.70 | 0.66 | 0.64 | 0.69 | 0.66 | 0.64 | 0.69 | 0.66 | 0.63 | 0.68 | 0.65 | 0.63 | 0.67 | 0.65 | 0.63 | 0.62 |
| 9 | 0.68 | 0.64 | 0.62 | 0.67 | 0.64 | 0.62 | 0.67 | 0.64 | 0.62 | 0.66 | 0.63 | 0.61 | 0.66 | 0.63 | 0.61 | 0.60 |
| 10 | 0.66 | 0.62 | 0.60 | 0.66 | 0.62 | 0.60 | 0.65 | 0.62 | 0.60 | 0.64 | 0.62 | 0.60 | 0.64 | 0.61 | 0.60 | 0.59 |

## Coefficient Utilization Curve






| | | |
|---|---|---|
| Equipment: GMS1980 | Date: 2019/1/25 | Operator: NT07 |
| Temperature(°C): 10.0 | Humidity(%): 65.0% | Distance(m): 7.50 |

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 | 13781.25 | 13938.75 | 13730.63 | 13280.63 | 12650.63 | 11677.50 | 10816.88 | 9905.63 | 8842.50 |
| 45.0 | 13786.88 | 13820.63 | 13511.25 | 12999.38 | 12240.00 | 11362.50 | 10501.88 | 9438.75 | 8482.50 |
| 90.0 | 13815.00 | 13500.00 | 12898.13 | 12099.38 | 11187.56 | 10413.00 | 9357.19 | 8262.00 | 7296.75 |
| 135.0 | 13921.88 | 13590.00 | 12971.25 | 12256.88 | 11548.13 | 10333.13 | 9393.75 | 8550.00 | 7335.00 |
| 180.0 | 13781.25 | 13365.00 | 12588.75 | 11166.19 | 10939.50 | 10015.88 | 8921.81 | 7824.94 | 6747.19 |
| 225.0 | 13786.88 | 13466.25 | 12937.50 | 11902.50 | 11222.44 | 10309.50 | 9240.75 | 8159.06 | 7201.13 |
| 270.0 | 13815.00 | 13865.63 | 13550.63 | 13038.75 | 12256.88 | 11328.75 | 10406.25 | 9455.63 | 8358.75 |
| 315.0 | 13921.88 | 13921.88 | 13606.88 | 13021.88 | 12330.00 | 11168.44 | 10481.63 | 9417.38 | 8440.88 |
| 360.0 | 13781.25 | 13938.75 | 13730.63 | 13280.63 | 12650.63 | 11677.50 | 10816.88 | 9905.63 | 8842.50 |

| C/γ(°) | 9.0 | 10.0 | 11.0 | 12.0 | 13.0 | 14.0 | 15.0 | 16.0 | 17.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 7785.00 | 6868.13 | 5878.13 | 5090.63 | 4308.75 | 3661.88 | 3189.38 | 2851.88 | 2437.31 |
| 45.0 | 7413.75 | 6367.50 | 5518.13 | 4758.75 | 3948.75 | 3436.88 | 3026.25 | 2846.25 | 2359.13 |
| 90.0 | 6247.13 | 5293.69 | 4559.06 | 3857.63 | 3347.44 | 2883.94 | 2519.44 | 2253.94 | 2027.25 |
| 135.0 | 6305.63 | 5563.13 | 4612.50 | 3982.50 | 3459.38 | 2936.25 | 2846.25 | 2314.13 | 2064.94 |
| 180.0 | 5843.25 | 4947.19 | 4269.38 | 3637.69 | 3187.13 | 2777.63 | 2454.19 | 2214.56 | 2004.19 |
| 225.0 | 6176.81 | 5242.50 | 4513.50 | 3821.06 | 3319.31 | 2872.13 | 2518.88 | 2262.94 | 2047.50 |
| 270.0 | 7284.38 | 6243.75 | 5394.38 | 4635.00 | 3915.00 | 3324.38 | 2908.13 | 2670.75 | 2237.06 |
| 315.0 | 7349.06 | 6284.81 | 5408.44 | 4546.69 | 3905.44 | 3324.38 | 2866.50 | 2532.94 | 2268.00 |
| 360.0 | 7785.00 | 6868.13 | 5878.13 | 5090.63 | 4308.75 | 3661.88 | 3189.38 | 2851.88 | 2437.31 |

| C/γ(°) | 18.0 | 19.0 | 20.0 | 21.0 | 22.0 | 23.0 | 24.0 | 25.0 | 26.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 2197.69 | 1992.38 | 1773.56 | 1624.50 | 1492.88 | 1362.38 | 1252.69 | 1172.25 | 1096.31 |
| 45.0 | 2124.56 | 1928.81 | 1717.88 | 1569.38 | 1432.13 | 1298.81 | 1207.69 | 1131.75 | 1056.94 |
| 90.0 | 1783.69 | 1620.56 | 1483.88 | 1337.63 | 1239.19 | 1121.29 | 1072.58 | 1011.88 | 953.83 |
| 135.0 | 1861.31 | 1710.00 | 1525.50 | 1403.44 | 1283.06 | 1181.25 | 1108.13 | 1049.63 | 985.50 |
| 180.0 | 1776.94 | 1618.31 | 1477.13 | 1319.63 | 1217.81 | 1116.17 | 1056.83 | 991.80 | 919.63 |
| 225.0 | 1817.44 | 1659.94 | 1521.56 | 1367.44 | 1261.13 | 1114.71 | 1088.16 | 1018.58 | 957.66 |
| 270.0 | 2023.88 | 1840.50 | 1642.50 | 1507.50 | 1388.25 | 1270.13 | 1174.50 | 1104.75 | 1035.56 |
| 315.0 | 1999.13 | 1819.69 | 1661.63 | 1492.88 | 1374.75 | 1272.38 | 1118.98 | 1104.81 | 1046.93 |
| 360.0 | 2197.69 | 1992.38 | 1773.56 | 1624.50 | 1492.88 | 1362.38 | 1252.69 | 1172.25 | 1096.31 |

| C/γ(°) | 27.0 | 28.0 | 29.0 | 30.0 | 31.0 | 32.0 | 33.0 | 34.0 | 35.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 1029.94 | 966.94 | 870.75 | 774.00 | 657.56 | 541.69 | 443.25 | 335.25 | 300.94 |
| 45.0 | 991.13 | 916.88 | 810.56 | 708.19 | 595.69 | 478.13 | 388.69 | 294.19 | 186.69 |
| 90.0 | 860.74 | 778.39 | 666.51 | 540.34 | 453.66 | 343.97 | 237.32 | 175.44 | 118.80 |
| 135.0 | 898.88 | 807.19 | 691.88 | 583.88 | 469.13 | 356.06 | 288.00 | 173.03 | 109.41 |
| 180.0 | 817.99 | 718.88 | 600.81 | 487.58 | 393.19 | 289.97 | 199.35 | 134.27 | 90.11 |
| 225.0 | 863.10 | 763.37 | 651.94 | 552.38 | 440.83 | 335.42 | 237.04 | 160.59 | 104.34 |
| 270.0 | 969.75 | 892.13 | 786.38 | 685.69 | 572.06 | 462.94 | 368.44 | 291.94 | 176.91 |
| 315.0 | 984.26 | 903.77 | 800.27 | 685.13 | 581.63 | 470.08 | 361.97 | 271.46 | 189.84 |
| 360.0 | 1029.94 | 966.94 | 870.75 | 774.00 | 657.56 | 541.69 | 443.25 | 335.25 | 300.94 |

| C/γ(°) | 36.0 | 37.0 | 38.0 | 39.0 | 40.0 | 41.0 | 42.0 | 43.0 | 44.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 158.51 | 103.28 | 73.91 | 66.43 | 59.79 | 54.39 | 49.39 | 45.17 | 41.34 |
| 45.0 | 121.95 | 85.44 | 68.23 | 61.43 | 55.18 | 49.50 | 45.56 | 41.85 | 37.97 |
| 90.0 | 79.31 | 72.23 | 65.36 | 58.11 | 53.38 | 48.38 | 43.65 | 39.49 | 36.34 |
| 135.0 | 80.61 | 70.20 | 60.81 | 55.29 | 51.36 | 46.24 | 42.02 | 38.81 | 35.49 |
| 180.0 | 69.92 | 62.21 | 55.41 | 50.06 | 45.79 | 41.74 | 38.08 | 34.88 | 32.29 |
| 225.0 | 73.07 | 65.25 | 58.22 | 51.53 | 47.48 | 43.20 | 39.60 | 35.61 | 32.96 |
| 270.0 | 116.10 | 81.79 | 68.23 | 61.71 | 56.03 | 51.24 | 46.58 | 42.69 | 38.81 |
| 315.0 | 113.91 | 83.08 | 72.84 | 64.29 | 58.28 | 53.83 | 48.49 | 44.38 | 40.50 |
| 360.0 | 158.51 | 103.28 | 73.91 | 66.43 | 59.79 | 54.39 | 49.39 | 45.17 | 41.34 |

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 | 37.41 | 34.43 | 32.29 | 29.76 | 27.96 | 26.49 | 25.03 | 24.30 | 23.29 |
| 45.0 | 34.65 | 32.23 | 29.87 | 27.96 | 26.55 | 24.98 | 24.02 | 23.29 | 22.33 |
| 90.0 | 33.47 | 31.22 | 29.03 | 27.56 | 26.10 | 25.03 | 24.02 | 23.34 | 22.67 |
| 135.0 | 32.85 | 30.77 | 28.86 | 27.62 | 26.21 | 25.26 | 24.41 | 23.74 | 22.95 |
| 180.0 | 29.87 | 28.13 | 26.78 | 25.31 | 24.36 | 23.51 | 22.67 | 22.05 | 21.66 |
| 225.0 | 30.66 | 28.46 | 26.61 | 25.37 | 24.13 | 23.12 | 22.39 | 21.71 | 21.15 |
| 270.0 | 35.55 | 32.91 | 30.49 | 28.63 | 27.28 | 25.54 | 24.64 | 23.91 | 22.95 |
| 315.0 | 36.79 | 34.65 | 31.89 | 29.93 | 28.74 | 26.89 | 25.88 | 25.03 | 24.30 |
| 360.0 | 37.41 | 34.43 | 32.29 | 29.76 | 27.96 | 26.49 | 25.03 | 24.30 | 23.29 |

| C/γ(°) | 54.0 | 55.0 | 56.0 | 57.0 | 58.0 | 59.0 | 60.0 | 61.0 | 62.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 22.50 | 21.99 | 21.60 | 21.21 | 20.93 | 20.76 | 20.25 | 20.14 | 19.91 |
| 45.0 | 21.83 | 21.43 | 21.04 | 20.70 | 20.48 | 20.14 | 19.91 | 19.74 | 19.46 |
| 90.0 | 22.16 | 21.71 | 21.32 | 21.04 | 20.59 | 20.31 | 20.14 | 19.80 | 19.63 |
| 135.0 | 22.67 | 22.22 | 21.88 | 21.66 | 21.26 | 21.09 | 20.81 | 20.53 | 20.42 |
| 180.0 | 21.26 | 20.93 | 20.76 | 20.42 | 20.19 | 20.03 | 19.74 | 19.80 | 19.58 |
| 225.0 | 20.87 | 20.48 | 20.19 | 20.08 | 19.69 | 19.58 | 19.41 | 19.18 | 19.18 |
| 270.0 | 22.44 | 22.05 | 21.60 | 21.21 | 20.98 | 20.64 | 20.36 | 20.19 | 19.91 |
| 315.0 | 23.46 | 23.12 | 22.67 | 22.22 | 21.77 | 21.43 | 21.04 | 20.87 | 20.59 |
| 360.0 | 22.50 | 21.99 | 21.60 | 21.21 | 20.93 | 20.76 | 20.25 | 20.14 | 19.91 |

| C/γ(°) | 63.0 | 64.0 | 65.0 | 66.0 | 67.0 | 68.0 | 69.0 | 70.0 | 71.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 19.63 | 19.52 | 19.29 | 18.84 | 18.45 | 17.94 | 17.49 | 17.16 | 16.71 |
| 45.0 | 19.29 | 19.13 | 18.68 | 18.28 | 17.83 | 17.27 | 16.88 | 16.48 | 16.03 |
| 90.0 | 19.52 | 18.84 | 18.45 | 17.94 | 17.38 | 16.99 | 16.54 | 16.14 | 15.81 |
| 135.0 | 20.19 | 19.74 | 19.29 | 18.73 | 18.17 | 17.78 | 17.27 | 16.88 | 16.43 |
| 180.0 | 19.24 | 18.90 | 18.51 | 17.83 | 17.49 | 17.16 | 16.59 | 16.31 | 15.92 |
| 225.0 | 18.96 | 18.68 | 18.28 | 17.94 | 17.38 | 17.04 | 16.48 | 16.09 | 15.75 |
| 270.0 | 19.80 | 19.63 | 19.18 | 18.73 | 18.23 | 17.66 | 17.27 | 16.76 | 16.31 |
| 315.0 | 20.36 | 20.25 | 19.69 | 19.18 | 18.73 | 18.11 | 17.66 | 17.16 | 16.71 |
| 360.0 | 19.63 | 19.52 | 19.29 | 18.84 | 18.45 | 17.94 | 17.49 | 17.16 | 16.71 |

| C/γ(°) | 72.0 | 73.0 | 74.0 | 75.0 | 76.0 | 77.0 | 78.0 | 79.0 | 80.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 16.20 | 15.81 | 15.47 | 15.08 | 14.68 | 14.34 | 13.95 | 13.73 | 13.44 |
| 45.0 | 15.69 | 15.24 | 14.96 | 14.57 | 14.18 | 13.89 | 13.61 | 13.33 | 12.99 |
| 90.0 | 15.30 | 14.91 | 14.57 | 14.23 | 13.89 | 13.61 | 13.33 | 13.05 | 12.77 |
| 135.0 | 15.98 | 15.64 | 15.19 | 14.74 | 14.46 | 14.18 | 13.78 | 13.44 | 13.22 |
| 180.0 | 15.47 | 15.19 | 14.85 | 14.51 | 14.18 | 13.95 | 13.61 | 13.33 | 13.11 |
| 225.0 | 15.30 | 14.91 | 14.57 | 14.23 | 13.89 | 13.67 | 13.39 | 13.11 | 12.83 |
| 270.0 | 15.98 | 15.53 | 15.13 | 14.68 | 14.40 | 14.06 | 13.73 | 13.50 | 13.16 |
| 315.0 | 16.26 | 15.81 | 15.47 | 15.08 | 14.57 | 14.23 | 13.95 | 13.61 | 13.28 |
| 360.0 | 16.20 | 15.81 | 15.47 | 15.08 | 14.68 | 14.34 | 13.95 | 13.73 | 13.44 |

| C/γ(°) | 81.0 | 82.0 | 83.0 | 84.0 | 85.0 | 86.0 | 87.0 | 88.0 | 89.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 13.11 | 12.88 | 12.60 | 12.38 | 12.09 | 11.93 | 11.70 | 11.53 | 11.31 |
| 45.0 | 12.83 | 12.54 | 12.32 | 12.09 | 11.93 | 11.76 | 11.64 | 11.53 | 11.31 |
| 90.0 | 12.54 | 12.32 | 12.26 | 11.81 | 11.64 | 11.48 | 11.36 | 11.14 | 10.29 |
| 135.0 | 12.88 | 12.54 | 12.21 | 11.93 | 11.81 | 11.64 | 11.48 | 11.25 | 10.46 |
| 180.0 | 12.83 | 12.71 | 12.43 | 12.15 | 12.04 | 11.98 | 11.76 | 11.42 | 10.46 |
| 225.0 | 12.54 | 12.32 | 12.04 | 11.81 | 11.59 | 11.42 | 11.31 | 11.08 | 10.46 |
| 270.0 | 12.88 | 12.60 | 12.26 | 11.98 | 11.76 | 11.42 | 11.14 | 11.03 | 10.97 |
| 315.0 | 12.99 | 12.71 | 12.43 | 12.15 | 11.87 | 11.64 | 11.42 | 11.19 | 11.08 |
| 360.0 | 13.11 | 12.88 | 12.60 | 12.38 | 12.09 | 11.93 | 11.70 | 11.53 | 11.31 |

Intensity data(cd)



| C/γ(°) | 90.0 |
|---|---|
| 0.0 | 10.74 |
| 45.0 | 10.41 |
| 90.0 | 10.35 |
| 135.0 | 10.41 |
| 180.0 | 10.41 |
| 225.0 | 10.41 |
| 270.0 | 10.46 |
| 315.0 | 10.52 |
| 360.0 | 10.74 |