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

## Nata

LumCAT: 2-1120-A3
Luminaire: 99.02.73.172+92.76.365.00

| | |
|---|---|
| Report No: NATA0100 | Voltage(V): 34.5000 |
| Test No: GC2018082813 | Current(A): 0.5000 |
| LampCAT: SAMSUNG LC026D | Power (W): 17.2500 |
| Lamp flux(lm): 2486.0 | PF: 0.0000 |
| Number of Lamps: 1 | Ballast type: DC |
| Length(mm): 71 | Width(mm): 71 |
| Phm Type: C | Height(mm): 0 |

## Photometric Results

Lumens(lm): 2281.04
Efficiency(%): 91.76%
Lumens(lm)/Power(W): 132.39
Central intensity(cd): 11467.560
Maximum intensity(cd): 11467.560
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=18.2
[C90/270]Total=18.2
Field angle(10%Imax): [C0/180]Total=42.1
[C90/270]Total=42.1
Maximum s/h(1/2): C0_180=0.31 C90_270=0.31
Maximum s/h(1/4): C0_180=0.31 C90_270=0.31
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 91.86%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.531%

| | | |
|---|---|---|
| Equipment: GMS1980 | Date: 2018/8/28 | Operator: NT07 |
| Temperature(°C): 25.0 | Humidity(%): 60.0% | Distance(m): 7.42 |

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 0.0 | 11467.560 | 2.744 | 2.744 | .110% | .120% |
| 1.0 | 11346.298 | 21.715 | 24.459 | .873% | 1.072% |
| 2.0 | 11196.958 | 42.852 | 67.311 | 1.724% | 2.951% |
| 3.0 | 10841.431 | 62.221 | 129.532 | 2.503% | 5.679% |
| 4.0 | 10367.120 | 79.304 | 208.836 | 3.190% | 9.155% |
| 5.0 | 9697.428 | 92.684 | 301.52 | 3.728% | 13.219% |
| 6.0 | 8888.305 | 101.884 | 403.403 | 4.098% | 17.685% |
| 7.0 | 7845.812 | 104.854 | 508.257 | 4.218% | 22.282% |
| 8.0 | 6893.956 | 105.214 | 613.472 | 4.232% | 26.894% |
| 9.0 | 5851.050 | 100.373 | 713.845 | 4.038% | 31.295% |
| 10.0 | 4824.042 | 91.861 | 805.706 | 3.695% | 35.322% |
| 11.0 | 4033.432 | 84.397 | 890.103 | 3.395% | 39.022% |
| 12.0 | 3360.780 | 76.625 | 966.728 | 3.082% | 42.381% |
| 13.0 | 2794.525 | 68.936 | 1035.664 | 2.773% | 45.403% |
| 14.0 | 2321.040 | 61.576 | 1097.24 | 2.477% | 48.103% |
| 15.0 | 2068.125 | 58.698 | 1155.938 | 2.361% | 50.676% |
| 16.0 | 1727.188 | 52.207 | 1208.145 | 2.100% | 52.965% |
| 17.0 | 1550.388 | 49.708 | 1257.853 | 2.000% | 55.144% |
| 18.0 | 1408.205 | 47.720 | 1305.573 | 1.920% | 57.236% |
| 19.0 | 1287.983 | 45.984 | 1351.557 | 1.850% | 59.252% |
| 20.0 | 1208.020 | 45.308 | 1396.865 | 1.823% | 61.238% |
| 21.0 | 1148.779 | 45.146 | 1442.011 | 1.816% | 63.217% |
| 22.0 | 1094.501 | 44.962 | 1486.973 | 1.809% | 65.189% |
| 23.0 | 1060.372 | 45.435 | 1532.408 | 1.828% | 67.180% |
| 24.0 | 1030.078 | 45.945 | 1578.352 | 1.848% | 69.195% |
| 25.0 | 999.673 | 46.330 | 1624.682 | 1.864% | 71.226% |
| 26.0 | 976.590 | 46.947 | 1671.629 | 1.888% | 73.284% |
| 27.0 | 952.531 | 47.422 | 1719.05 | 1.908% | 75.363% |
| 28.0 | 924.844 | 47.613 | 1766.664 | 1.915% | 77.450% |
| 29.0 | 901.831 | 47.946 | 1814.609 | 1.929% | 79.552% |
| 30.0 | 877.269 | 48.101 | 1862.71 | 1.935% | 81.661% |
| 31.0 | 839.803 | 47.432 | 1910.142 | 1.908% | 83.740% |
| 32.0 | 797.389 | 46.337 | 1956.479 | 1.864% | 85.772% |
| 33.0 | 746.702 | 44.597 | 2001.077 | 1.794% | 87.727% |
| 34.0 | 676.877 | 41.507 | 2042.584 | 1.670% | 89.546% |
| 35.0 | 606.522 | 38.150 | 2080.733 | 1.535% | 91.219% |
| 36.0 | 529.058 | 34.101 | 2114.835 | 1.372% | 92.714% |
| 37.0 | 447.925 | 29.561 | 2144.396 | 1.189% | 94.010% |

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 38.0 | 366.958 | 24.775 | 2169.171 | .997% | 95.096% |
| 39.0 | 295.102 | 20.366 | 2189.536 | .819% | 95.989% |
| 40.0 | 219.854 | 15.497 | 2205.034 | .623% | 96.668% |
| 41.0 | 160.661 | 11.559 | 2216.592 | .465% | 97.175% |
| 42.0 | 101.228 | 7.428 | 2224.02 | .299% | 97.500% |
| 43.0 | 60.562 | 4.529 | 2228.549 | .182% | 97.699% |
| 44.0 | 38.127 | 2.904 | 2231.454 | .117% | 97.826% |
| 45.0 | 24.968 | 1.936 | 2233.39 | .078% | 97.911% |
| 46.0 | 19.359 | 1.527 | 2234.917 | .061% | 97.978% |
| 47.0 | 16.090 | 1.290 | 2236.207 | .052% | 98.035% |
| 48.0 | 14.624 | 1.192 | 2237.399 | .048% | 98.087% |
| 49.0 | 13.702 | 1.134 | 2238.533 | .046% | 98.137% |
| 50.0 | 13.110 | 1.101 | 2239.635 | .044% | 98.185% |
| 51.0 | 12.725 | 1.084 | 2240.719 | .044% | 98.233% |
| 52.0 | 12.422 | 1.073 | 2241.792 | .043% | 98.280% |
| 53.0 | 12.154 | 1.064 | 2242.857 | .043% | 98.326% |
| 54.0 | 11.933 | 1.059 | 2243.916 | .043% | 98.373% |
| 55.0 | 11.699 | 1.051 | 2244.966 | .042% | 98.419% |
| 56.0 | 11.500 | 1.045 | 2246.012 | .042% | 98.465% |
| 57.0 | 11.321 | 1.041 | 2247.053 | .042% | 98.510% |
| 58.0 | 11.135 | 1.036 | 2248.089 | .042% | 98.556% |
| 59.0 | 10.977 | 1.032 | 2249.12 | .042% | 98.601% |
| 60.0 | 10.846 | 1.030 | 2250.151 | .041% | 98.646% |
| 61.0 | 10.729 | 1.029 | 2251.18 | .041% | 98.691% |
| 62.0 | 10.633 | 1.030 | 2252.209 | .041% | 98.736% |
| 63.0 | 10.530 | 1.029 | 2253.238 | .041% | 98.781% |
| 64.0 | 10.461 | 1.031 | 2254.269 | .041% | 98.827% |
| 65.0 | 10.364 | 1.030 | 2255.299 | .041% | 98.872% |
| 66.0 | 10.296 | 1.031 | 2256.33 | .041% | 98.917% |
| 67.0 | 10.247 | 1.034 | 2257.365 | .042% | 98.962% |
| 68.0 | 10.185 | 1.036 | 2258.4 | .042% | 99.008% |
| 69.0 | 10.130 | 1.037 | 2259.438 | .042% | 99.053% |
| 70.0 | 10.082 | 1.039 | 2260.477 | .042% | 99.099% |
| 71.0 | 10.020 | 1.039 | 2261.516 | .042% | 99.144% |
| 72.0 | 9.979 | 1.041 | 2262.556 | .042% | 99.190% |
| 73.0 | 9.951 | 1.044 | 2263.6 | .042% | 99.236% |
| 74.0 | 9.910 | 1.045 | 2264.645 | .042% | 99.281% |
| 75.0 | 9.883 | 1.047 | 2265.691 | .042% | 99.327% |

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 76.0 | 9.841 | 1.047 | 2266.738 | .042% | 99.373% |
| 77.0 | 9.821 | 1.049 | 2267.788 | .042% | 99.419% |
| 78.0 | 9.807 | 1.052 | 2268.84 | .042% | 99.465% |
| 79.0 | 9.773 | 1.052 | 2269.892 | .042% | 99.511% |
| 80.0 | 9.766 | 1.055 | 2270.946 | .042% | 99.558% |
| 81.0 | 9.731 | 1.054 | 2272 | .042% | 99.604% |
| 82.0 | 9.752 | 1.059 | 2273.059 | .043% | 99.650% |
| 83.0 | 9.779 | 1.064 | 2274.124 | .043% | 99.697% |
| 84.0 | 9.814 | 1.070 | 2275.194 | .043% | 99.744% |
| 85.0 | 9.869 | 1.078 | 2276.272 | .043% | 99.791% |
| 86.0 | 9.903 | 1.083 | 2277.356 | .044% | 99.839% |
| 87.0 | 9.621 | 1.054 | 2278.409 | .042% | 99.885% |
| 88.0 | 9.594 | 1.051 | 2279.461 | .042% | 99.931% |
| 89.0 | 9.573 | 1.050 | 2280.51 | .042% | 99.977% |
| 90.0 | 9.580 | 0.525 | 2281.035 | .021% | 100.000% |

## Zonal flux distribution table



ZONAL LUMEN SUMMARY

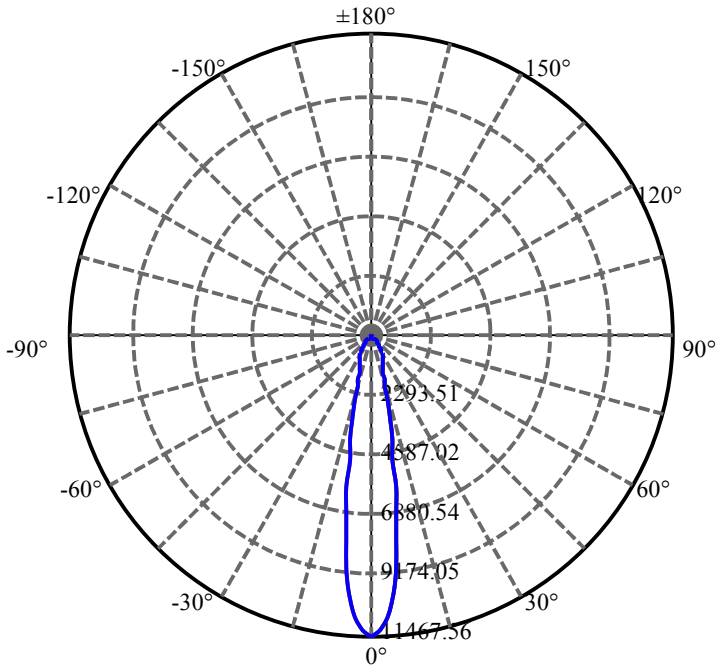
| Zone | Lumens | %Lamp | %Fixt |
|---|---|---|---|
| 0-30 | 1862.71 | 74.93% | 81.66% |
| 0-40 | 2205.03 | 88.70% | 96.67% |
| 0-60 | 2250.15 | 90.51% | 98.65% |
| 0-90 | 2280.51 | 91.73% | 99.98% |
| 0-120 | 2280.51 | 91.73% | 99.98% |
| 0-180 | 2281.04 | 91.76% | 100.00% |
| 60-90 | 31.39 | 1.26% | 1.38% |
| 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% |
| 0-29.21 | 1824.83 | 73.40% | 80.00% |

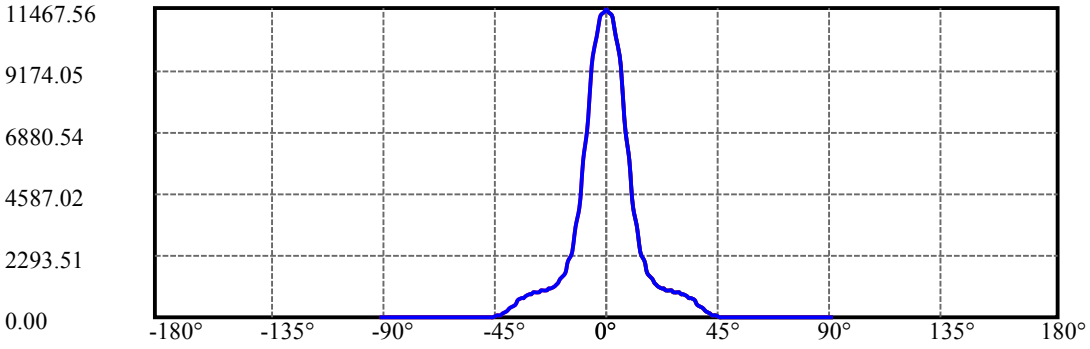
ZONAL LUMEN SUMMARY

| | |
|---|---|
| 0-10 | 805.71 |
| 10-20 | 591.16 |
| 20-30 | 465.85 |
| 30-40 | 342.32 |
| 40-50 | 34.60 |
| 50-60 | 10.52 |
| 60-70 | 10.33 |
| 70-80 | 10.47 |
| 80-90 | 9.56 |
| 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:

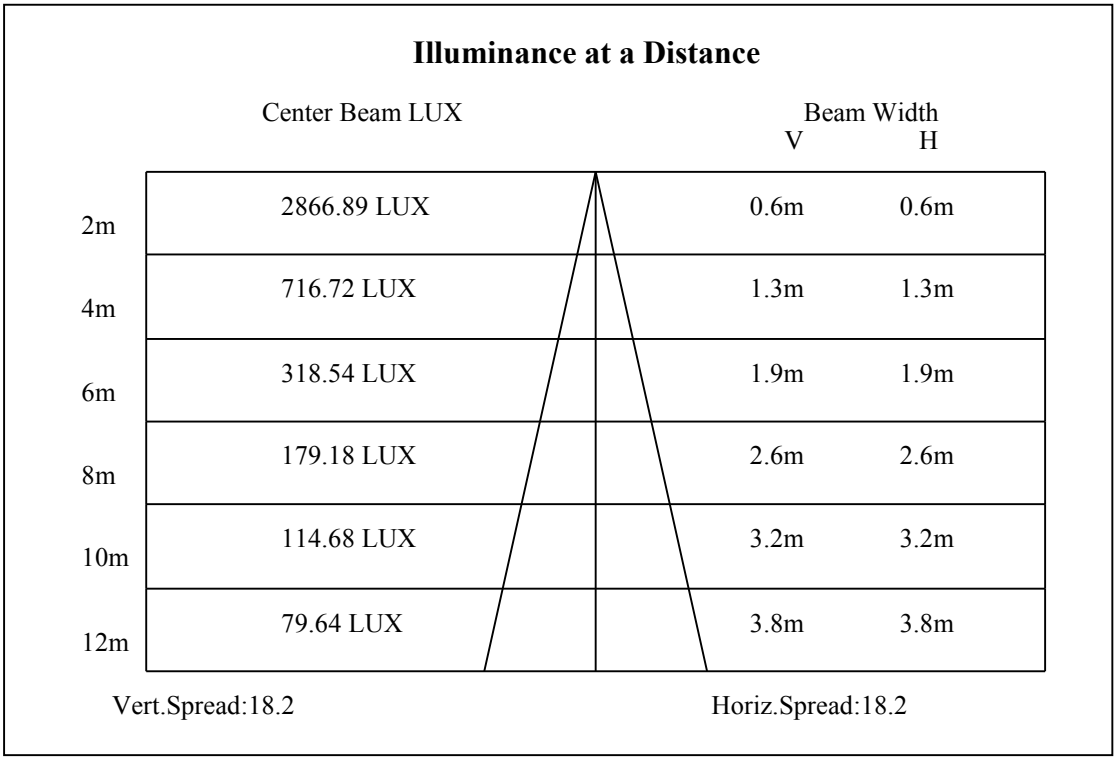
C90/C270:

Field angle(10%Imax):C0/180Left:21.0 Right:21.0
:C90/270Left:21.0 Right:21.0

Beam Angle(50%Imax):C0/180Left:9.1 Right:9.1
:C90/270Left:9.1 Right:9.1

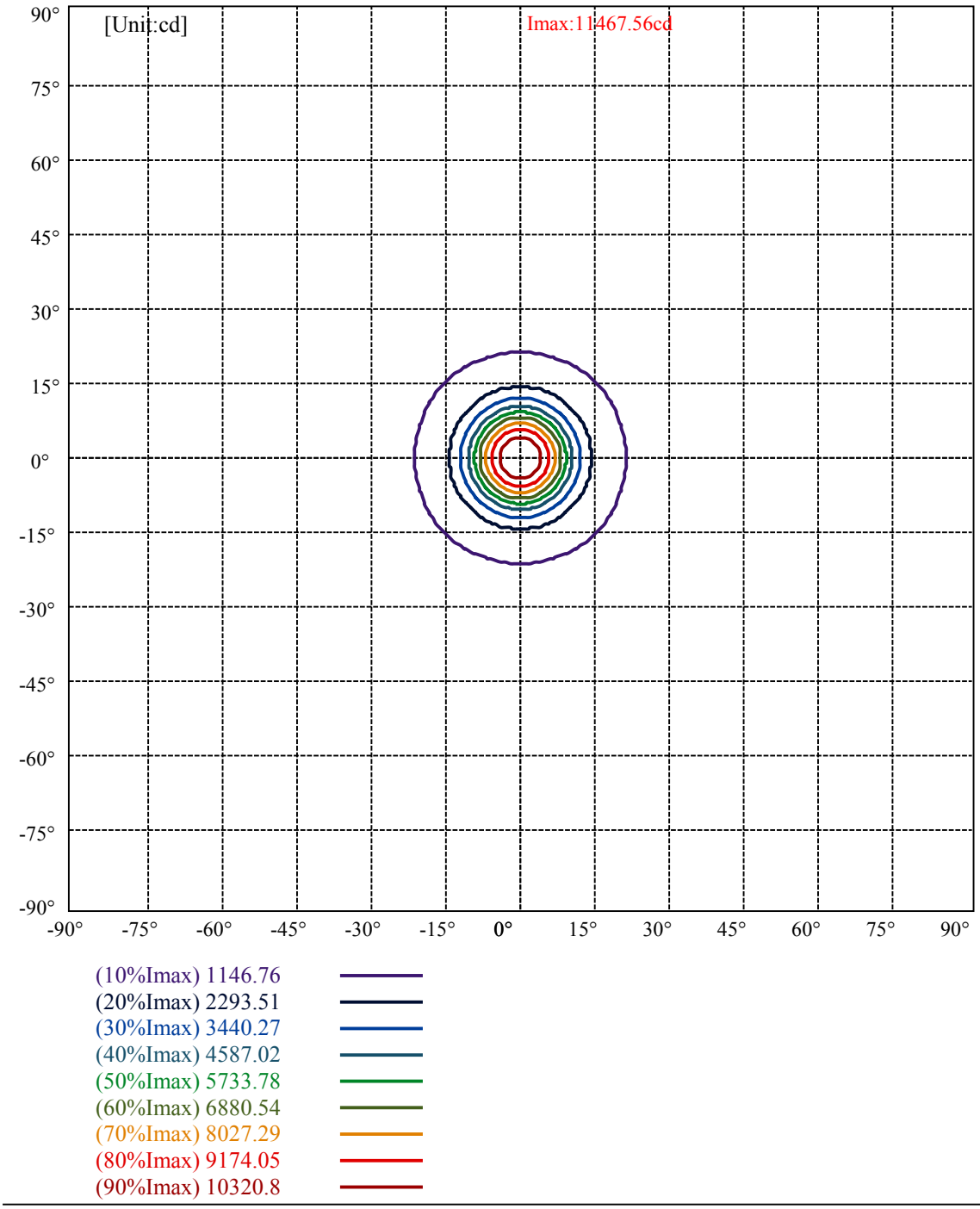
Lux distance Curve





ISO-Intensity(V-H)





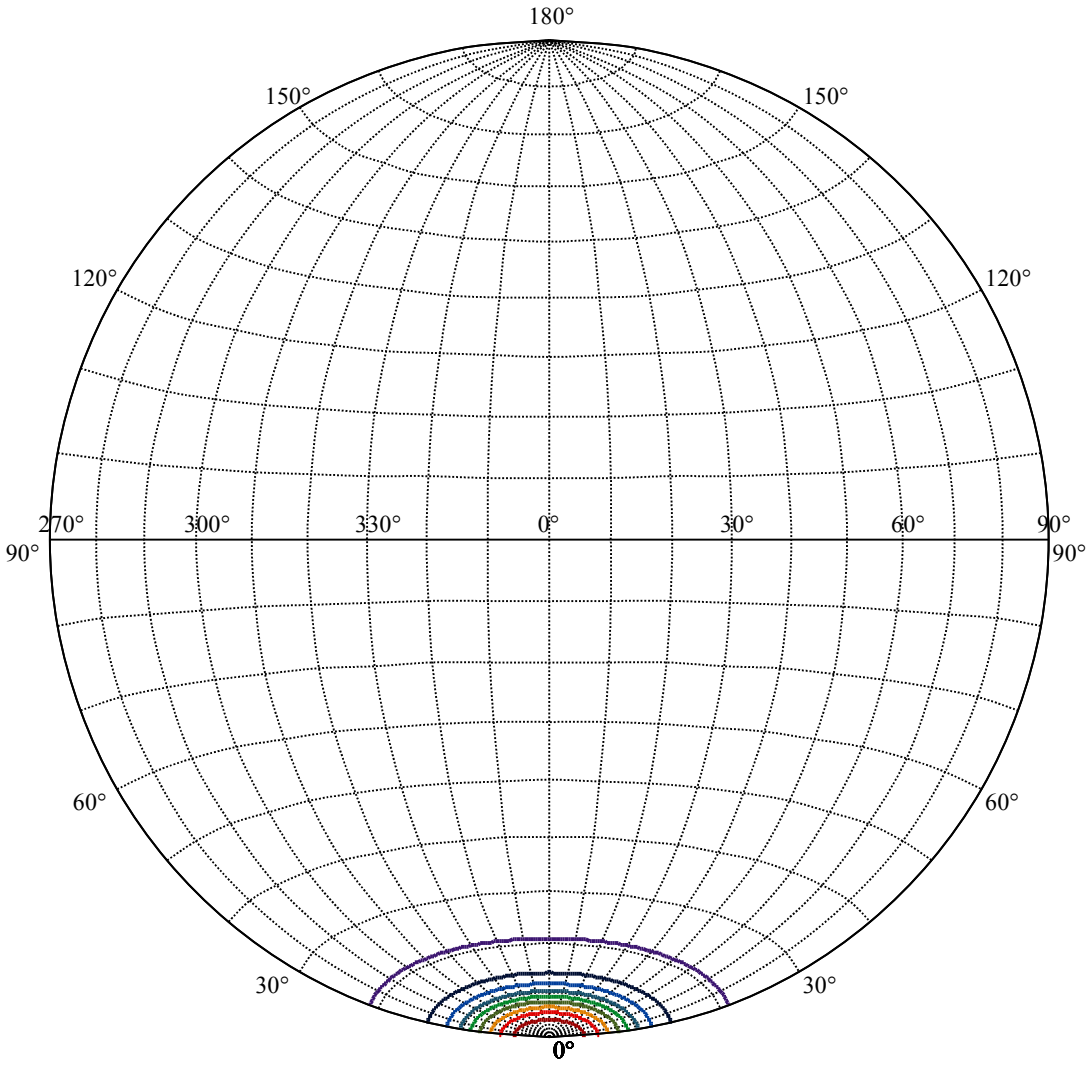

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2018/8/28
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

ISO candela diagram on circular web






House [Unit:cd] Road

Imax:11467.56

(10%Imax) 1146.76
(20%Imax) 2293.51
(30%Imax) 3440.27
(40%Imax) 4587.02
(50%Imax) 5733.78
(60%Imax) 6880.54
(70%Imax) 8027.29
(80%Imax) 9174.05
(90%Imax) 10320.8

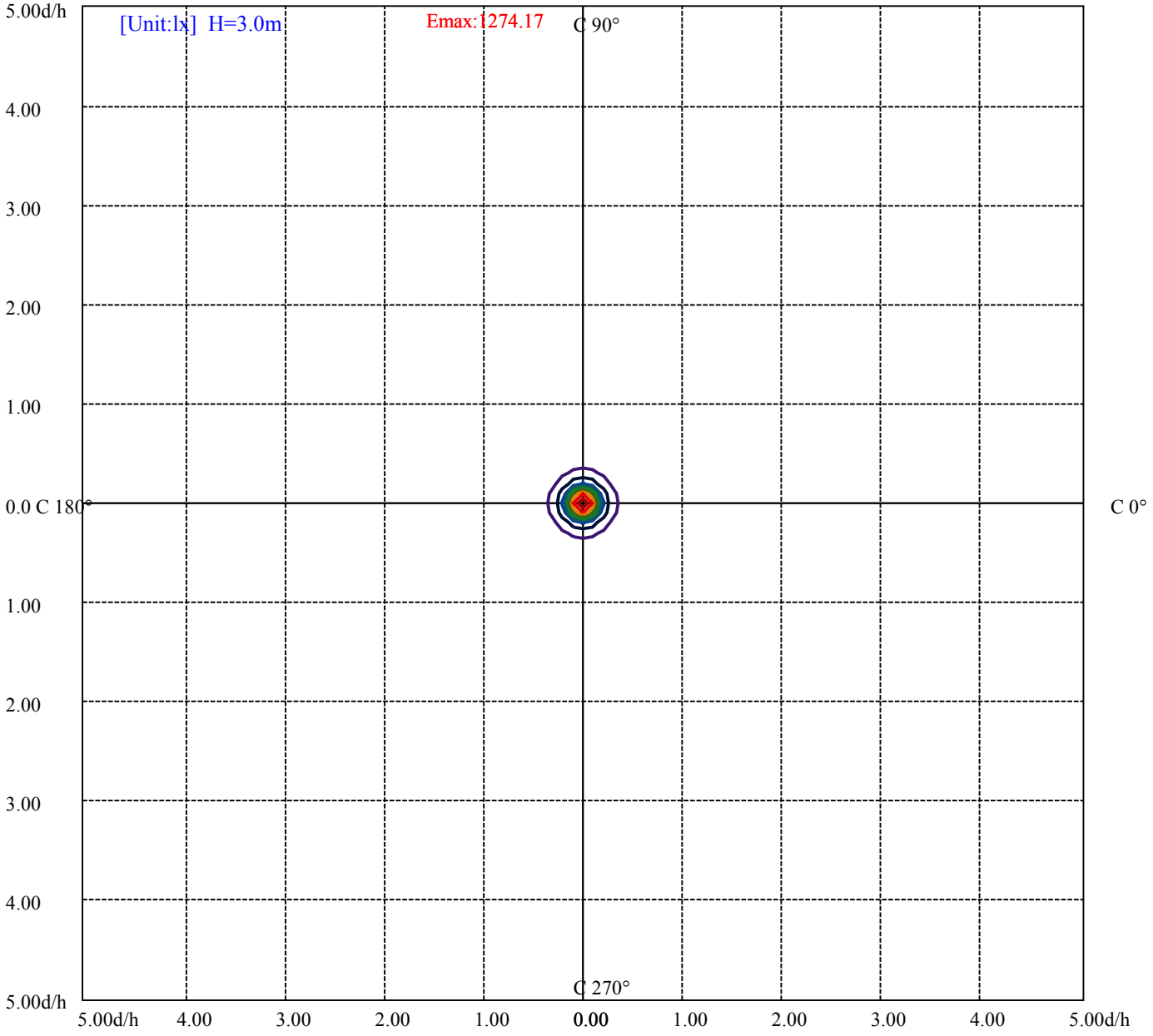
Equipment: GMS1980
Temperature(°C): 25.0

Date: 2018/8/28
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

## ISO illuminance diagram





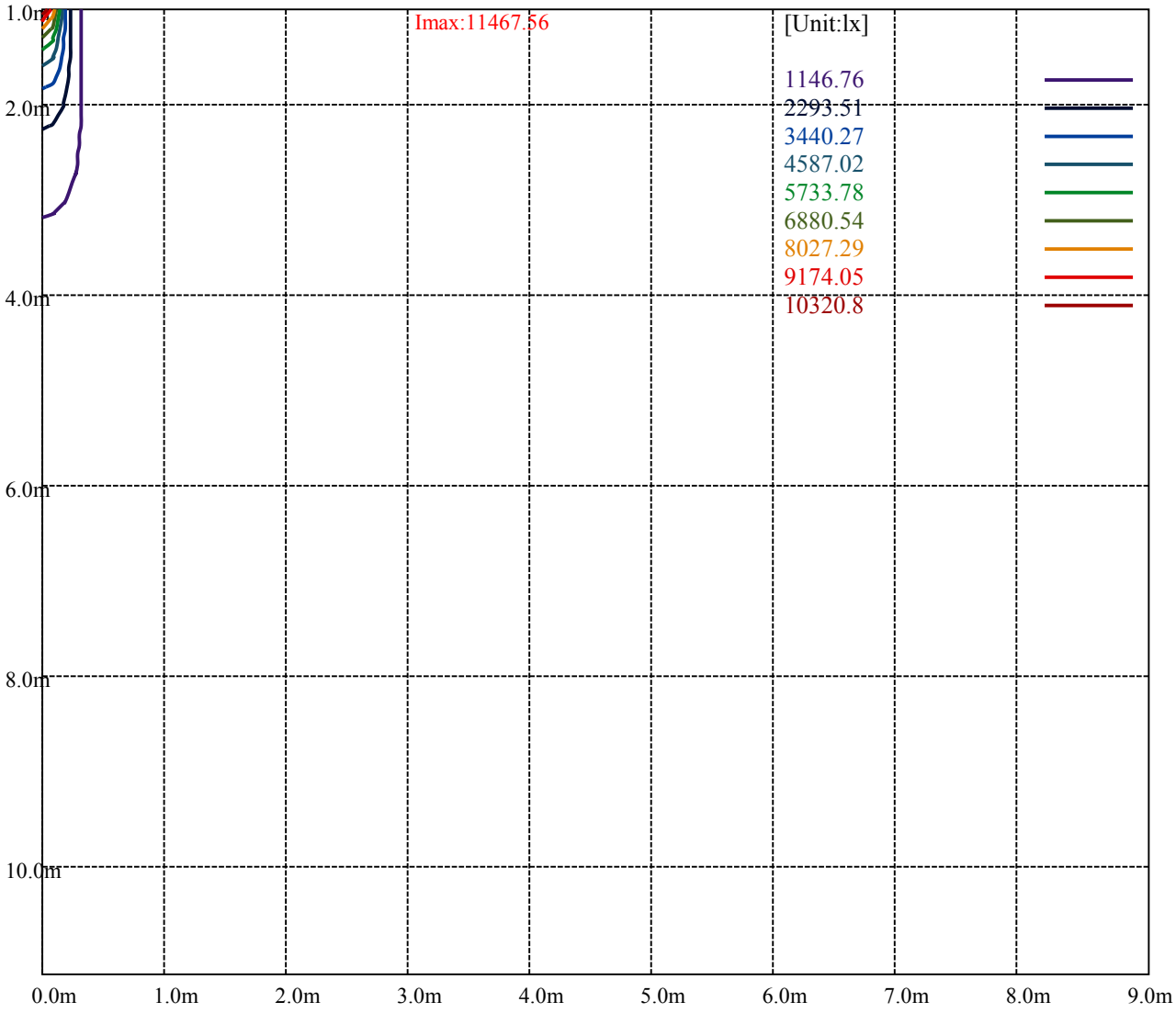

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2018/8/28
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

## Space ISO Lux diagram






Equipment: GMS1980
Temperature(°C): 25.0

Date: 2018/8/28
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

## Luminance Limitting Curve(no luminous side)



Luminance Table

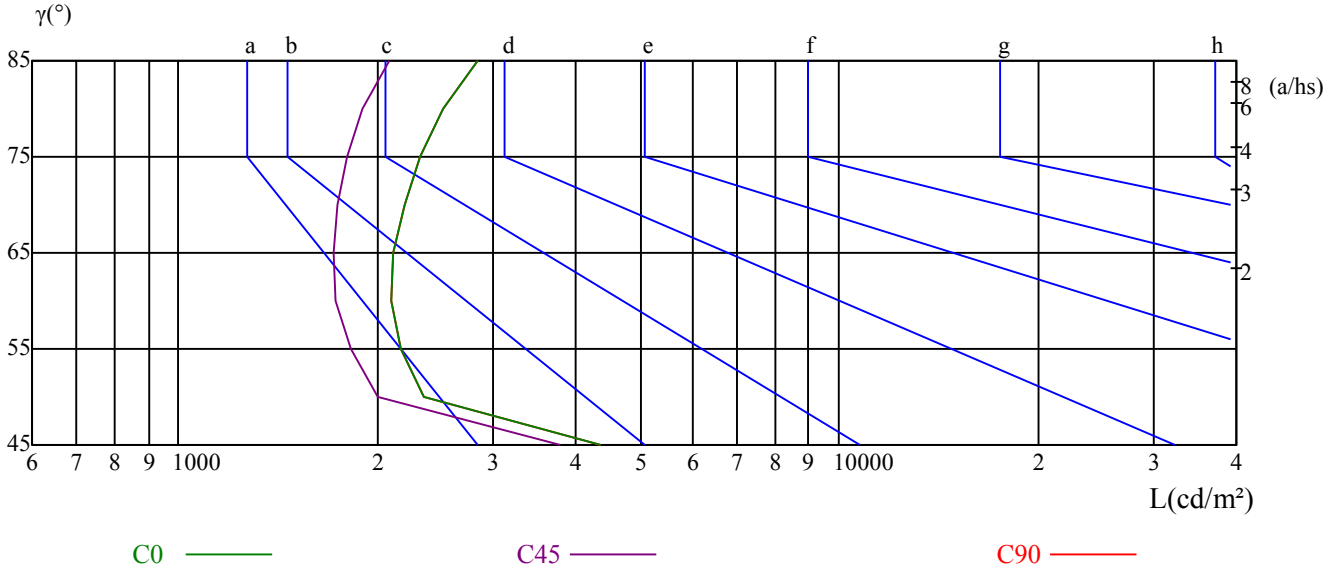
| γ | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 |
|---|---|---|---|---|---|---|---|---|---|
| C0 | 4363 | 2350 | 2170 | 2100 | 2116 | 2195 | 2323 | 2516 | 2835 |
| C45 | 3773 | 2002 | 1820 | 1733 | 1715 | 1744 | 1805 | 1905 | 2082 |
| C90 | 4363 | 2350 | 2170 | 2100 | 2116 | 2195 | 2323 | 2516 | 2835 |

| L(Hor)(65) | L(Ver)(65) | L45(65) | L(Hor)(75) | L(Ver)(75) | L45(75) | L(Hor)(85) | L(Ver)(85) | L45(85) |
|---|---|---|---|---|---|---|---|---|
| 4865 | 4865 | 4865 | 7575 | 7575 | 7575 | 22462 | 22462 | 22462 |

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

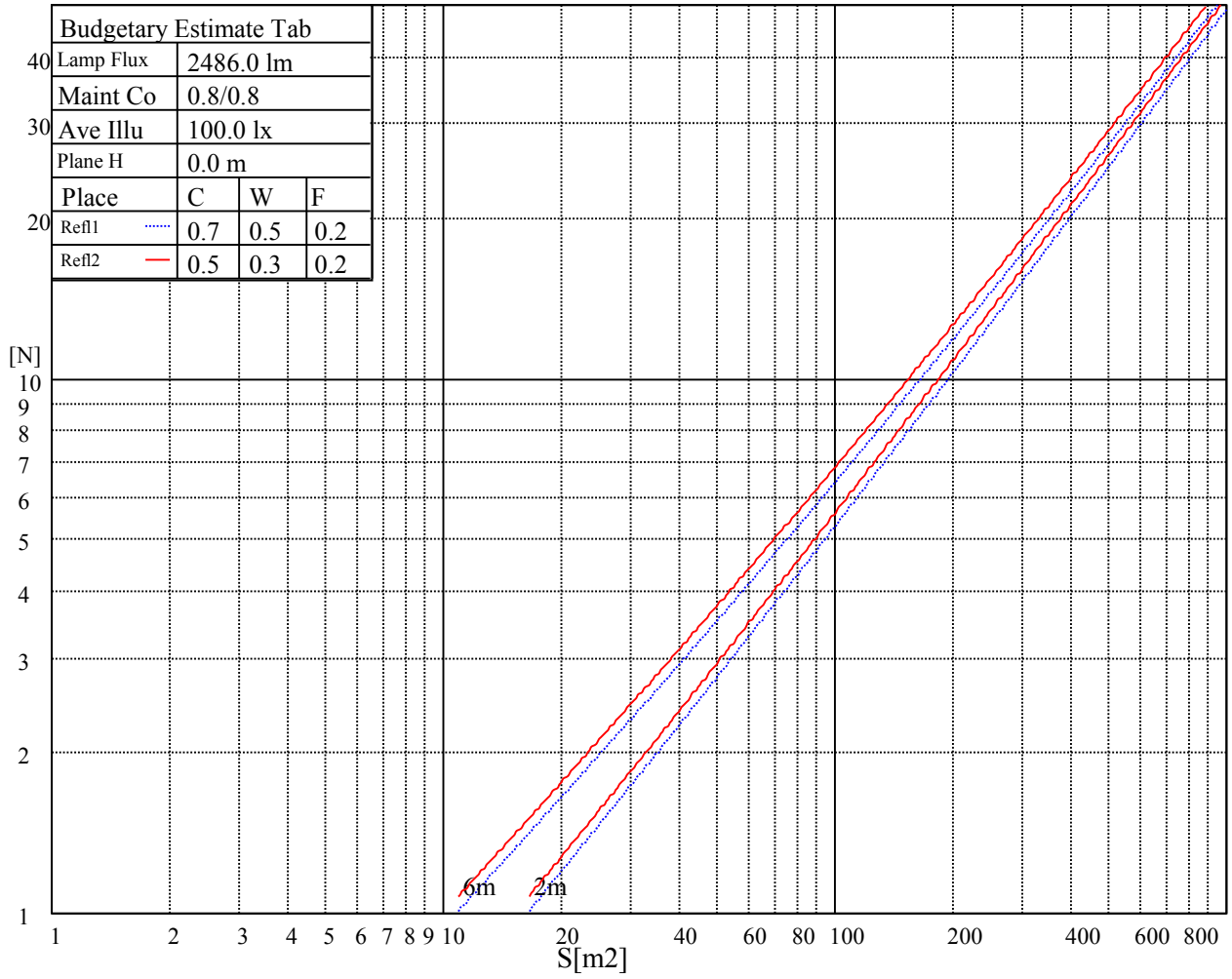


| Illumination assessment according UGR | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Rf of Ceiling | | 70 | 70 | 50 | 50 | 30 | 70 | 70 | 50 | 50 | 30 |
| Rf of Wall | | 50 | 30 | 50 | 30 | 30 | 50 | 30 | 50 | 30 | 30 |
| Rf of Floor | | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Room dimensions | | Viewed crosswise | | | | | Viewed endwise | | | | |
| X | Y | | | | | | | | | | |
| 2H | 2H | 1.04 | 1.96 | 1.41 | 2.27 | 2.59 | 1.03 | 1.95 | 1.40 | 2.26 | 2.58 |
| | 3H | 3.19 | 4.00 | 3.58 | 4.33 | 4.70 | 3.19 | 4.00 | 3.57 | 4.33 | 4.70 |
| | 4H | 4.39 | 5.14 | 4.80 | 5.49 | 5.88 | 4.38 | 5.13 | 4.79 | 5.48 | 5.87 |
| | 6H | 5.66 | 6.34 | 6.08 | 6.72 | 7.12 | 5.66 | 6.34 | 6.08 | 6.72 | 7.12 |
| | 8H | 6.31 | 6.95 | 6.75 | 7.35 | 7.76 | 6.31 | 6.95 | 6.75 | 7.34 | 7.75 |
| | 12H | 7.34 | 7.95 | 7.78 | 8.34 | 8.77 | 7.32 | 7.93 | 7.76 | 8.32 | 8.75 |
| 4H | 2H | 1.50 | 2.24 | 1.90 | 2.60 | 2.99 | 1.49 | 2.24 | 1.90 | 2.59 | 2.98 |
| | 3H | 3.95 | 4.57 | 4.37 | 4.98 | 5.39 | 3.94 | 4.56 | 4.36 | 4.97 | 5.37 |
| | 4H | 5.33 | 5.88 | 5.77 | 6.30 | 6.75 | 5.31 | 5.86 | 5.75 | 6.28 | 6.73 |
| | 6H | 6.71 | 7.17 | 7.18 | 7.63 | 8.10 | 6.70 | 7.17 | 7.17 | 7.62 | 8.09 |
| | 8H | 7.47 | 7.91 | 7.95 | 8.36 | 8.84 | 7.46 | 7.90 | 7.94 | 8.35 | 8.83 |
| | 12H | 8.50 | 8.87 | 8.99 | 9.36 | 9.84 | 8.48 | 8.85 | 8.97 | 9.34 | 9.82 |
| 8H | 4H | 5.75 | 6.19 | 6.23 | 6.64 | 7.12 | 5.74 | 6.18 | 6.22 | 6.63 | 7.10 |
| | 6H | 7.37 | 7.72 | 7.88 | 8.22 | 8.71 | 7.37 | 7.71 | 7.88 | 8.22 | 8.70 |
| | 8H | 8.30 | 8.60 | 8.83 | 9.13 | 9.62 | 8.29 | 8.59 | 8.82 | 9.12 | 9.62 |
| | 12H | 9.46 | 9.72 | 9.98 | 10.22 | 10.80 | 9.44 | 9.70 | 9.96 | 10.20 | 10.78 |
| 12H | 4H | 5.84 | 6.21 | 6.33 | 6.70 | 7.18 | 5.83 | 6.20 | 6.32 | 6.69 | 7.17 |
| | 6H | 7.75 | 7.85 | 8.08 | 8.32 | 8.87 | 7.74 | 7.84 | 8.08 | 8.32 | 8.87 |
| | 8H | 8.57 | 8.83 | 9.09 | 9.33 | 9.91 | 8.56 | 8.82 | 9.08 | 9.32 | 9.90 |

| Variation with the observer position at spacings: | | |
|---|---|---|
| S = 1.0H | 5.3/-9.2 | 5.3/-9.2 |
| S = 1.5H | 7.9/-7.4 | 7.9/-7.4 |
| S = 2.0H | 9.6/-6.1 | 9.6/-6.1 |
| Standard tables: | BK1 | BK1 |
| Uncorrected UGR | -1.3 | -1.3 |

## Budgetary Estimate Table






Equipment: GMS1980 Date: 2018/8/28 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.42

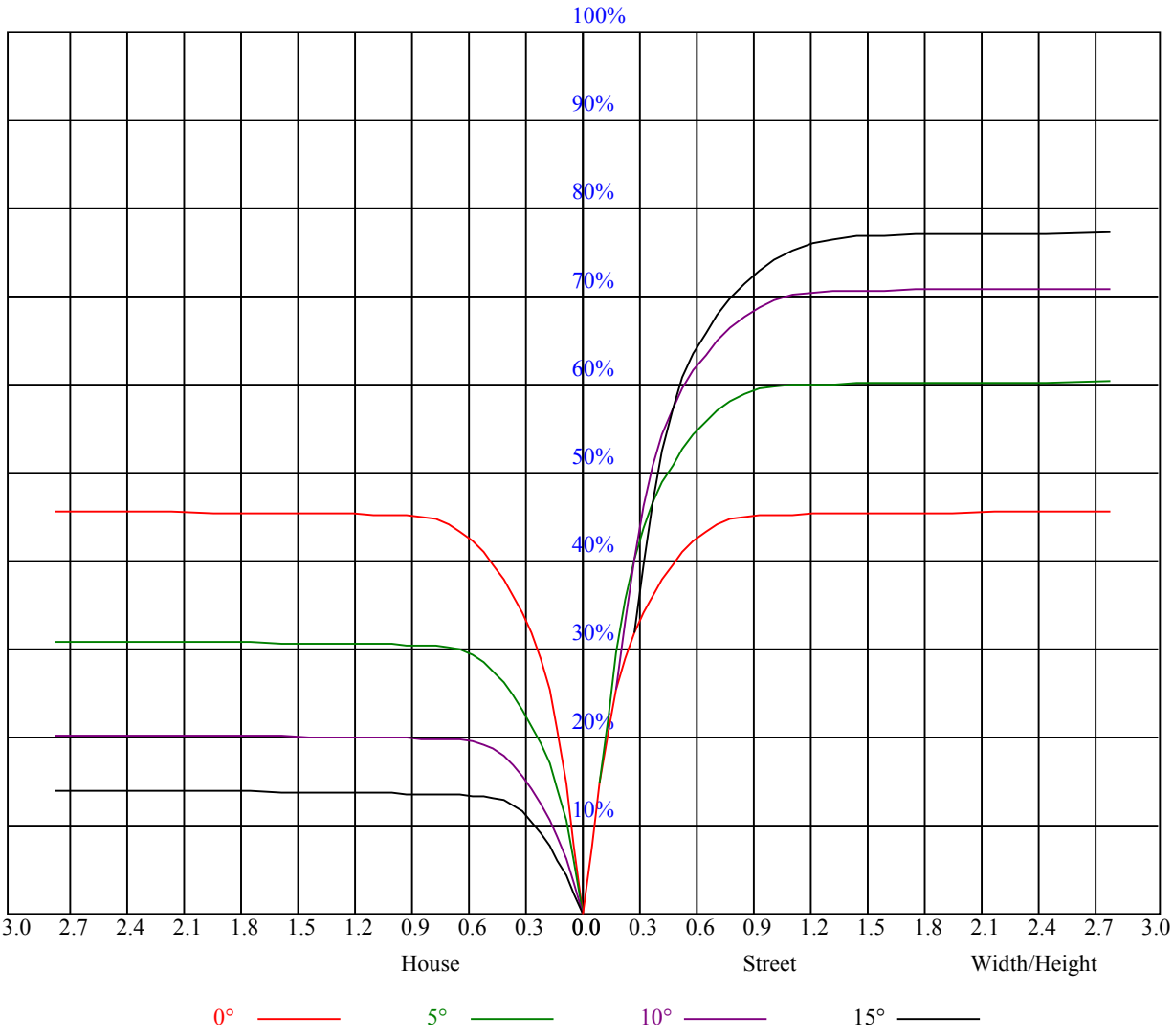
# Utilization factor table for indoor luminaire



| 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 | 1.09 | 1.09 | 1.09 | 1.07 | 1.07 | 1.07 | 1.02 | 1.02 | 1.02 | 0.98 | 0.98 | 0.98 | 0.94 | 0.94 | 0.94 | 0.92 |
| 1 | 1.03 | 1.01 | 0.99 | 1.01 | 0.99 | 0.97 | 0.97 | 0.96 | 0.94 | 0.94 | 0.92 | 0.91 | 0.90 | 0.90 | 0.89 | 0.87 |
| 2 | 0.97 | 0.94 | 0.91 | 0.95 | 0.93 | 0.90 | 0.93 | 0.90 | 0.88 | 0.90 | 0.88 | 0.86 | 0.87 | 0.86 | 0.85 | 0.83 |
| 3 | 0.92 | 0.88 | 0.85 | 0.91 | 0.87 | 0.85 | 0.88 | 0.86 | 0.83 | 0.86 | 0.84 | 0.82 | 0.84 | 0.82 | 0.81 | 0.79 |
| 4 | 0.88 | 0.84 | 0.80 | 0.87 | 0.83 | 0.80 | 0.85 | 0.82 | 0.79 | 0.83 | 0.80 | 0.78 | 0.81 | 0.79 | 0.77 | 0.76 |
| 5 | 0.84 | 0.79 | 0.76 | 0.83 | 0.79 | 0.76 | 0.81 | 0.78 | 0.75 | 0.80 | 0.77 | 0.75 | 0.79 | 0.76 | 0.74 | 0.73 |
| 6 | 0.80 | 0.76 | 0.73 | 0.80 | 0.75 | 0.72 | 0.78 | 0.75 | 0.72 | 0.77 | 0.74 | 0.72 | 0.76 | 0.73 | 0.71 | 0.70 |
| 7 | 0.77 | 0.73 | 0.70 | 0.77 | 0.72 | 0.69 | 0.76 | 0.72 | 0.69 | 0.75 | 0.71 | 0.69 | 0.74 | 0.71 | 0.68 | 0.67 |
| 8 | 0.74 | 0.70 | 0.67 | 0.74 | 0.70 | 0.67 | 0.73 | 0.69 | 0.67 | 0.72 | 0.69 | 0.66 | 0.71 | 0.68 | 0.66 | 0.65 |
| 9 | 0.72 | 0.67 | 0.64 | 0.71 | 0.67 | 0.64 | 0.70 | 0.67 | 0.64 | 0.70 | 0.66 | 0.64 | 0.69 | 0.66 | 0.64 | 0.63 |
| 10 | 0.69 | 0.65 | 0.62 | 0.69 | 0.65 | 0.62 | 0.68 | 0.65 | 0.62 | 0.68 | 0.64 | 0.62 | 0.67 | 0.64 | 0.62 | 0.61 |

## Coefficient Utilization Curve






| | | |
|---|---|---|
| Equipment: GMS1980 | Date: 2018/8/28 | Operator: NT07 |
| Temperature(°C): 25.0 | Humidity(%): 60.0% | Distance(m): 7.42 |

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 | 11440.72 | 11545.33 | 11517.80 | 11418.70 | 11170.94 | 10691.95 | 10124.87 | 9293.52 | 8434.64 |
| 45.0 | 11457.24 | 11550.83 | 11572.86 | 11468.25 | 11270.05 | 10917.68 | 10328.58 | 9612.85 | 8764.98 |
| 90.0 | 11495.78 | 11506.79 | 11440.72 | 10960.08 | 10855.47 | 10340.14 | 9640.93 | 8577.24 | 7611.00 |
| 135.0 | 11473.75 | 11435.21 | 11259.03 | 10961.73 | 10477.23 | 9778.02 | 8979.70 | 7922.62 | 6942.61 |
| 180.0 | 11440.72 | 10983.20 | 10876.39 | 10218.47 | 9497.23 | 8630.64 | 7526.76 | 6350.76 | 5336.62 |
| 225.0 | 11457.24 | 10939.16 | 10815.28 | 10162.86 | 9323.80 | 8417.57 | 7415.00 | 6146.50 | 5148.32 |
| 270.0 | 11501.28 | 11385.66 | 11104.88 | 10680.94 | 10003.75 | 9133.86 | 8225.43 | 7135.31 | 6144.29 |
| 315.0 | 11473.75 | 11424.20 | 10988.71 | 10860.43 | 10338.49 | 9669.56 | 8865.18 | 7727.72 | 6769.18 |
| 360.0 | 11440.72 | 11545.33 | 11517.80 | 11418.70 | 11170.94 | 10691.95 | 10124.87 | 9293.52 | 8434.64 |

| C/γ(°) | 9.0 | 10.0 | 11.0 | 12.0 | 13.0 | 14.0 | 15.0 | 16.0 | 17.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 7372.05 | 6265.42 | 5301.93 | 4432.04 | 3540.13 | 2978.55 | 2796.87 | 2106.46 | 1847.69 |
| 45.0 | 7592.28 | 6595.76 | 5577.21 | 4525.64 | 3666.76 | 3061.14 | 2802.37 | 2135.64 | 1873.02 |
| 90.0 | 6587.50 | 5340.47 | 4430.39 | 3685.48 | 3013.24 | 2496.26 | 2147.75 | 1844.39 | 1637.93 |
| 135.0 | 5802.94 | 4734.85 | 3909.00 | 3237.32 | 2829.90 | 2218.77 | 1925.87 | 1649.49 | 1485.42 |
| 180.0 | 4309.26 | 3477.36 | 2892.11 | 2385.59 | 2042.04 | 1752.45 | 1536.62 | 1392.93 | 1286.67 |
| 225.0 | 4282.29 | 3396.98 | 2838.71 | 2409.27 | 2030.48 | 1748.04 | 1564.70 | 1406.69 | 1298.78 |
| 270.0 | 5065.19 | 4134.74 | 3452.04 | 2967.54 | 2548.56 | 2053.05 | 1798.69 | 1564.15 | 1423.21 |
| 315.0 | 5796.89 | 4646.76 | 3866.06 | 3243.37 | 2685.10 | 2260.07 | 1972.12 | 1717.76 | 1550.39 |
| 360.0 | 7372.05 | 6265.42 | 5301.93 | 4432.04 | 3540.13 | 2978.55 | 2796.87 | 2106.46 | 1847.69 |

| C/γ(°) | 18.0 | 19.0 | 20.0 | 21.0 | 22.0 | 23.0 | 24.0 | 25.0 | 26.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 1649.49 | 1483.22 | 1351.63 | 1263.54 | 1188.12 | 1134.71 | 1089.57 | 1052.13 | 1024.60 |
| 45.0 | 1683.07 | 1479.92 | 1345.03 | 1266.85 | 1180.96 | 1129.21 | 1089.57 | 1049.93 | 1023.50 |
| 90.0 | 1461.75 | 1328.51 | 1244.27 | 1170.50 | 1096.12 | 1071.95 | 1039.57 | 1006.87 | 985.84 |
| 135.0 | 1359.34 | 1251.98 | 1174.90 | 1121.50 | 1075.80 | 1040.02 | 1014.69 | 989.91 | 968.99 |
| 180.0 | 1185.91 | 1093.48 | 1083.62 | 1048.11 | 1017.83 | 996.69 | 976.54 | 952.53 | 929.02 |
| 225.0 | 1210.14 | 1146.82 | 1093.42 | 1062.42 | 1029.00 | 1009.13 | 986.72 | 959.91 | 941.90 |
| 270.0 | 1316.40 | 1228.86 | 1160.04 | 1115.99 | 1074.15 | 1044.97 | 1016.34 | 989.91 | 967.34 |
| 315.0 | 1399.53 | 1291.07 | 1211.24 | 1141.32 | 1094.03 | 1056.31 | 1027.63 | 996.19 | 971.53 |
| 360.0 | 1649.49 | 1483.22 | 1351.63 | 1263.54 | 1188.12 | 1134.71 | 1089.57 | 1052.13 | 1024.60 |

| C/γ(°) | 27.0 | 28.0 | 29.0 | 30.0 | 31.0 | 32.0 | 33.0 | 34.0 | 35.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 993.77 | 967.34 | 944.77 | 920.54 | 887.51 | 866.04 | 842.91 | 792.81 | 735.55 |
| 45.0 | 999.27 | 969.54 | 945.87 | 924.40 | 890.26 | 867.14 | 841.81 | 798.32 | 735.55 |
| 90.0 | 963.16 | 935.19 | 915.20 | 888.17 | 859.38 | 834.88 | 788.63 | 712.10 | 651.76 |
| 135.0 | 946.97 | 921.64 | 899.07 | 877.05 | 845.12 | 804.37 | 744.91 | 662.33 | 593.51 |
| 180.0 | 908.98 | 881.89 | 859.76 | 831.02 | 776.96 | 706.81 | 637.33 | 556.68 | 481.03 |
| 225.0 | 918.95 | 889.49 | 866.53 | 834.54 | 776.02 | 706.26 | 638.05 | 561.36 | 475.14 |
| 270.0 | 941.46 | 914.49 | 889.71 | 872.09 | 834.66 | 780.70 | 721.79 | 644.71 | 563.78 |
| 315.0 | 947.69 | 919.17 | 893.73 | 870.33 | 848.53 | 812.91 | 758.18 | 686.72 | 615.86 |
| 360.0 | 993.77 | 967.34 | 944.77 | 920.54 | 887.51 | 866.04 | 842.91 | 792.81 | 735.55 |

| C/γ(°) | 36.0 | 37.0 | 38.0 | 39.0 | 40.0 | 41.0 | 42.0 | 43.0 | 44.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 672.24 | 597.91 | 497.71 | 417.88 | 339.15 | 283.54 | 178.27 | 121.29 | 69.43 |
| 45.0 | 668.38 | 585.80 | 502.11 | 423.38 | 336.95 | 281.89 | 185.26 | 121.01 | 72.73 |
| 90.0 | 570.38 | 488.30 | 415.07 | 335.73 | 250.29 | 194.24 | 134.72 | 65.63 | 38.37 |
| 135.0 | 515.33 | 434.39 | 353.46 | 279.69 | 240.38 | 140.67 | 83.69 | 45.31 | 29.57 |
| 180.0 | 394.37 | 308.37 | 237.40 | 164.95 | 102.18 | 59.30 | 33.69 | 24.83 | 18.94 |
| 225.0 | 386.66 | 311.23 | 230.96 | 157.68 | 96.73 | 54.29 | 32.70 | 24.83 | 18.17 |
| 270.0 | 489.45 | 404.11 | 321.53 | 286.29 | 172.88 | 114.24 | 60.56 | 33.58 | 25.66 |
| 315.0 | 535.64 | 453.28 | 377.41 | 295.21 | 220.28 | 157.13 | 100.92 | 48.01 | 32.15 |
| 360.0 | 672.24 | 597.91 | 497.71 | 417.88 | 339.15 | 283.54 | 178.27 | 121.29 | 69.43 |

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 | 37.49 | 27.25 | 19.16 | 16.19 | 15.03 | 13.76 | 13.16 | 12.77 | 12.39 |
| 45.0 | 38.65 | 27.09 | 19.99 | 16.19 | 14.98 | 14.09 | 13.38 | 12.88 | 12.61 |
| 90.0 | 28.79 | 21.09 | 16.08 | 15.14 | 13.98 | 13.27 | 12.88 | 12.61 | 12.39 |
| 135.0 | 21.31 | 16.85 | 15.31 | 14.37 | 13.43 | 12.99 | 12.72 | 12.50 | 12.17 |
| 180.0 | 15.80 | 14.81 | 13.87 | 13.38 | 12.99 | 12.72 | 12.39 | 12.06 | 11.89 |
| 225.0 | 15.75 | 14.87 | 13.76 | 13.32 | 12.88 | 12.50 | 12.28 | 12.06 | 11.78 |
| 270.0 | 18.50 | 15.91 | 14.87 | 13.82 | 13.05 | 12.72 | 12.44 | 12.22 | 11.95 |
| 315.0 | 23.45 | 17.01 | 15.69 | 14.59 | 13.27 | 12.83 | 12.55 | 12.28 | 12.06 |
| 360.0 | 37.49 | 27.25 | 19.16 | 16.19 | 15.03 | 13.76 | 13.16 | 12.77 | 12.39 |

| C/γ(°) | 54.0 | 55.0 | 56.0 | 57.0 | 58.0 | 59.0 | 60.0 | 61.0 | 62.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 12.17 | 11.89 | 11.67 | 11.45 | 11.23 | 11.07 | 10.90 | 10.79 | 10.68 |
| 45.0 | 12.39 | 12.11 | 11.89 | 11.67 | 11.45 | 11.29 | 11.12 | 10.96 | 10.85 |
| 90.0 | 12.11 | 11.84 | 11.67 | 11.45 | 11.29 | 11.12 | 10.96 | 10.85 | 10.74 |
| 135.0 | 12.00 | 11.78 | 11.56 | 11.34 | 11.23 | 11.07 | 10.90 | 10.85 | 10.74 |
| 180.0 | 11.67 | 11.51 | 11.29 | 11.18 | 10.96 | 10.85 | 10.74 | 10.63 | 10.57 |
| 225.0 | 11.56 | 11.40 | 11.18 | 11.07 | 10.90 | 10.74 | 10.68 | 10.57 | 10.46 |
| 270.0 | 11.78 | 11.51 | 11.34 | 11.18 | 11.01 | 10.85 | 10.74 | 10.63 | 10.52 |
| 315.0 | 11.78 | 11.56 | 11.40 | 11.23 | 11.01 | 10.85 | 10.74 | 10.57 | 10.52 |
| 360.0 | 12.17 | 11.89 | 11.67 | 11.45 | 11.23 | 11.07 | 10.90 | 10.79 | 10.68 |

| C/γ(°) | 63.0 | 64.0 | 65.0 | 66.0 | 67.0 | 68.0 | 69.0 | 70.0 | 71.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 10.57 | 10.46 | 10.35 | 10.30 | 10.24 | 10.19 | 10.13 | 10.08 | 10.02 |
| 45.0 | 10.74 | 10.63 | 10.52 | 10.46 | 10.35 | 10.30 | 10.24 | 10.19 | 10.13 |
| 90.0 | 10.63 | 10.57 | 10.46 | 10.35 | 10.30 | 10.24 | 10.19 | 10.13 | 10.08 |
| 135.0 | 10.63 | 10.57 | 10.46 | 10.41 | 10.35 | 10.30 | 10.19 | 10.19 | 10.08 |
| 180.0 | 10.46 | 10.41 | 10.35 | 10.30 | 10.24 | 10.19 | 10.13 | 10.08 | 10.02 |
| 225.0 | 10.41 | 10.35 | 10.24 | 10.19 | 10.19 | 10.13 | 10.08 | 10.02 | 9.97 |
| 270.0 | 10.41 | 10.35 | 10.30 | 10.19 | 10.19 | 10.08 | 10.08 | 10.02 | 9.97 |
| 315.0 | 10.41 | 10.35 | 10.24 | 10.19 | 10.13 | 10.08 | 10.02 | 9.97 | 9.91 |
| 360.0 | 10.57 | 10.46 | 10.35 | 10.30 | 10.24 | 10.19 | 10.13 | 10.08 | 10.02 |

| C/γ(°) | 72.0 | 73.0 | 74.0 | 75.0 | 76.0 | 77.0 | 78.0 | 79.0 | 80.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 9.97 | 9.97 | 9.91 | 9.86 | 9.86 | 9.80 | 9.80 | 9.74 | 9.80 |
| 45.0 | 10.02 | 10.02 | 9.97 | 9.97 | 9.86 | 9.86 | 9.86 | 9.80 | 9.80 |
| 90.0 | 10.02 | 9.97 | 9.91 | 9.91 | 9.86 | 9.80 | 9.80 | 9.80 | 9.74 |
| 135.0 | 10.02 | 10.02 | 9.97 | 9.91 | 9.91 | 9.91 | 9.86 | 9.80 | 9.74 |
| 180.0 | 10.02 | 9.97 | 9.97 | 9.91 | 9.86 | 9.86 | 9.86 | 9.80 | 9.80 |
| 225.0 | 9.97 | 9.91 | 9.86 | 9.86 | 9.80 | 9.80 | 9.80 | 9.74 | 9.80 |
| 270.0 | 9.91 | 9.91 | 9.86 | 9.86 | 9.80 | 9.80 | 9.74 | 9.74 | 9.74 |
| 315.0 | 9.91 | 9.86 | 9.86 | 9.80 | 9.80 | 9.74 | 9.74 | 9.74 | 9.69 |
| 360.0 | 9.97 | 9.97 | 9.91 | 9.86 | 9.86 | 9.80 | 9.80 | 9.74 | 9.80 |

| C/γ(°) | 81.0 | 82.0 | 83.0 | 84.0 | 85.0 | 86.0 | 87.0 | 88.0 | 89.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 9.74 | 9.74 | 9.69 | 9.69 | 9.69 | 9.69 | 9.69 | 9.63 | 9.58 |
| 45.0 | 9.74 | 9.74 | 9.74 | 9.69 | 9.69 | 9.69 | 9.63 | 9.63 | 9.58 |
| 90.0 | 9.74 | 9.69 | 9.69 | 9.69 | 9.69 | 9.80 | 9.58 | 9.58 | 9.52 |
| 135.0 | 9.74 | 9.80 | 9.80 | 9.80 | 9.91 | 9.91 | 9.69 | 9.58 | 9.58 |
| 180.0 | 9.74 | 9.80 | 9.86 | 9.91 | 9.91 | 9.69 | 9.63 | 9.58 | 9.58 |
| 225.0 | 9.74 | 9.80 | 9.97 | 10.02 | 9.91 | 9.74 | 9.58 | 9.58 | 9.58 |
| 270.0 | 9.69 | 9.74 | 9.80 | 9.97 | 10.19 | 10.46 | 9.58 | 9.58 | 9.58 |
| 315.0 | 9.69 | 9.69 | 9.69 | 9.74 | 9.97 | 10.24 | 9.58 | 9.58 | 9.58 |
| 360.0 | 9.74 | 9.74 | 9.69 | 9.69 | 9.69 | 9.69 | 9.69 | 9.63 | 9.58 |

## Intensity data(cd)

| C/γ(°) | 90.0 |
|---|---|
| 0.0 | 9.58 |
| 45.0 | 9.58 |
| 90.0 | 9.58 |
| 135.0 | 9.58 |
| 180.0 | 9.58 |
| 225.0 | 9.58 |
| 270.0 | 9.58 |
| 315.0 | 9.58 |
| 360.0 | 9.58 |