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

## NATA

LumCAT: 3-2069-A
Luminaire:

| | |
|---|---|
| Report No: NATA0100 | Voltage(V): 35.2000 |
| Test No: GC2019021817 | Current(A): 0.7000 |
| LampCAT: PHILIPS SLM 1211 LES19 | Power (W): 24.6400 |
| Lamp flux(lm): 3045.0 | PF: 0.0000 |
| Number of Lamps: 1 | Ballast type: DC |
| Length(mm): 76 | Width(mm): 76 |
| Phm Type: C | Height(mm): 0 |

## Photometric Results

Lumens(lm): 2712.16
Efficiency(%): 89.07%
Lumens(lm)/Power(W): 110.16
Central intensity(cd): 9183.093
Maximum intensity(cd): 9183.093
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=26.1
[C90/270]Total=26.1
Field angle(10%Imax): [C0/180]Total=61.5
[C90/270]Total=61.5
Maximum s/h(1/2): C0_180=0.44 C90_270=0.44
Maximum s/h(1/4): C0_180=0.44 C90_270=0.44
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 89.14%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.639%

| | | |
|---|---|---|
| Equipment: GMS1980 | Date: 2019/2/18 | Operator: NT07 |
| Temperature(°C): 10.0 | Humidity(%): 65.0% | Distance(m): 7.50 |

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 0.0 | 9183.094 | 2.197 | 2.197 | .072% | .081% |
| 1.0 | 9172.688 | 17.555 | 19.752 | .577% | .728% |
| 2.0 | 9121.641 | 34.910 | 54.662 | 1.146% | 2.015% |
| 3.0 | 9003.023 | 51.670 | 106.332 | 1.697% | 3.921% |
| 4.0 | 8802.984 | 67.339 | 173.671 | 2.211% | 6.403% |
| 5.0 | 8457.820 | 80.836 | 254.507 | 2.655% | 9.384% |
| 6.0 | 8064.211 | 92.437 | 346.945 | 3.036% | 12.792% |
| 7.0 | 7624.266 | 101.893 | 448.837 | 3.346% | 16.549% |
| 8.0 | 7151.555 | 109.146 | 557.983 | 3.584% | 20.573% |
| 9.0 | 6625.688 | 113.662 | 671.645 | 3.733% | 24.764% |
| 10.0 | 6126.961 | 116.672 | 788.317 | 3.832% | 29.066% |
| 11.0 | 5611.992 | 117.427 | 905.744 | 3.856% | 33.396% |
| 12.0 | 5105.391 | 116.402 | 1022.146 | 3.823% | 37.687% |
| 13.0 | 4612.008 | 113.771 | 1135.917 | 3.736% | 41.882% |
| 14.0 | 4106.813 | 108.951 | 1244.868 | 3.578% | 45.899% |
| 15.0 | 3633.750 | 103.134 | 1348.002 | 3.387% | 49.702% |
| 16.0 | 3192.609 | 96.502 | 1444.504 | 3.169% | 53.260% |
| 17.0 | 2773.195 | 88.913 | 1533.417 | 2.920% | 56.539% |
| 18.0 | 2424.656 | 82.165 | 1615.582 | 2.698% | 59.568% |
| 19.0 | 2156.273 | 76.983 | 1692.565 | 2.528% | 62.406% |
| 20.0 | 1914.328 | 71.799 | 1764.365 | 2.358% | 65.054% |
| 21.0 | 1711.688 | 67.268 | 1831.632 | 2.209% | 67.534% |
| 22.0 | 1567.758 | 64.403 | 1896.035 | 2.115% | 69.909% |
| 23.0 | 1442.109 | 61.791 | 1957.827 | 2.029% | 72.187% |
| 24.0 | 1348.031 | 60.126 | 2017.953 | 1.975% | 74.404% |
| 25.0 | 1274.555 | 59.069 | 2077.022 | 1.940% | 76.582% |
| 26.0 | 1212.820 | 58.303 | 2135.325 | 1.915% | 78.731% |
| 27.0 | 1140.159 | 56.763 | 2192.087 | 1.864% | 80.824% |
| 28.0 | 1109.580 | 57.124 | 2249.212 | 1.876% | 82.931% |
| 29.0 | 1055.067 | 56.092 | 2305.304 | 1.842% | 84.999% |
| 30.0 | 979.980 | 53.733 | 2359.037 | 1.765% | 86.980% |
| 31.0 | 895.655 | 50.586 | 2409.623 | 1.661% | 88.845% |
| 32.0 | 793.392 | 46.105 | 2455.728 | 1.514% | 90.545% |
| 33.0 | 700.629 | 41.845 | 2497.573 | 1.374% | 92.088% |
| 34.0 | 607.690 | 37.265 | 2534.838 | 1.224% | 93.462% |
| 35.0 | 514.962 | 32.391 | 2567.228 | 1.064% | 94.656% |
| 36.0 | 408.523 | 26.332 | 2593.561 | .865% | 95.627% |
| 37.0 | 322.088 | 21.256 | 2614.817 | .698% | 96.411% |

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 38.0 | 246.600 | 16.649 | 2631.466 | .547% | 97.025% |
| 39.0 | 150.089 | 10.358 | 2641.824 | .340% | 97.407% |
| 40.0 | 90.352 | 6.369 | 2648.193 | .209% | 97.641% |
| 41.0 | 47.841 | 3.442 | 2651.634 | .113% | 97.768% |
| 42.0 | 31.774 | 2.332 | 2653.966 | .077% | 97.854% |
| 43.0 | 26.311 | 1.968 | 2655.934 | .065% | 97.927% |
| 44.0 | 21.206 | 1.615 | 2657.549 | .053% | 97.986% |
| 45.0 | 17.796 | 1.380 | 2658.929 | .045% | 98.037% |
| 46.0 | 16.805 | 1.326 | 2660.255 | .044% | 98.086% |
| 47.0 | 16.228 | 1.302 | 2661.556 | .043% | 98.134% |
| 48.0 | 15.715 | 1.281 | 2662.837 | .042% | 98.181% |
| 49.0 | 15.377 | 1.273 | 2664.11 | .042% | 98.228% |
| 50.0 | 14.955 | 1.256 | 2665.366 | .041% | 98.275% |
| 51.0 | 14.583 | 1.243 | 2666.609 | .041% | 98.320% |
| 52.0 | 14.245 | 1.231 | 2667.84 | .040% | 98.366% |
| 53.0 | 13.880 | 1.216 | 2669.055 | .040% | 98.411% |
| 54.0 | 13.584 | 1.205 | 2670.26 | .040% | 98.455% |
| 55.0 | 13.296 | 1.194 | 2671.455 | .039% | 98.499% |
| 56.0 | 13.057 | 1.187 | 2672.642 | .039% | 98.543% |
| 57.0 | 12.790 | 1.176 | 2673.818 | .039% | 98.586% |
| 58.0 | 12.572 | 1.169 | 2674.987 | .038% | 98.629% |
| 59.0 | 12.431 | 1.169 | 2676.156 | .038% | 98.672% |
| 60.0 | 12.319 | 1.170 | 2677.326 | .038% | 98.716% |
| 61.0 | 12.185 | 1.169 | 2678.494 | .038% | 98.759% |
| 62.0 | 12.059 | 1.168 | 2679.662 | .038% | 98.802% |
| 63.0 | 11.960 | 1.169 | 2680.831 | .038% | 98.845% |
| 64.0 | 11.855 | 1.168 | 2681.999 | .038% | 98.888% |
| 65.0 | 11.798 | 1.173 | 2683.172 | .039% | 98.931% |
| 66.0 | 11.707 | 1.173 | 2684.344 | .039% | 98.974% |
| 67.0 | 11.637 | 1.175 | 2685.519 | .039% | 99.018% |
| 68.0 | 11.588 | 1.178 | 2686.697 | .039% | 99.061% |
| 69.0 | 11.531 | 1.181 | 2687.878 | .039% | 99.105% |
| 70.0 | 11.461 | 1.181 | 2689.059 | .039% | 99.148% |
| 71.0 | 11.384 | 1.180 | 2690.239 | .039% | 99.192% |
| 72.0 | 11.320 | 1.181 | 2691.42 | .039% | 99.235% |
| 73.0 | 11.264 | 1.181 | 2692.601 | .039% | 99.279% |
| 74.0 | 11.222 | 1.183 | 2693.784 | .039% | 99.322% |
| 75.0 | 11.187 | 1.185 | 2694.969 | .039% | 99.366% |

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 76.0 | 11.159 | 1.187 | 2696.156 | .039% | 99.410% |
| 77.0 | 11.123 | 1.189 | 2697.345 | .039% | 99.454% |
| 78.0 | 11.081 | 1.189 | 2698.533 | .039% | 99.497% |
| 79.0 | 11.039 | 1.188 | 2699.722 | .039% | 99.541% |
| 80.0 | 11.011 | 1.189 | 2700.911 | .039% | 99.585% |
| 81.0 | 11.004 | 1.192 | 2702.103 | .039% | 99.629% |
| 82.0 | 10.976 | 1.192 | 2703.294 | .039% | 99.673% |
| 83.0 | 10.969 | 1.194 | 2704.488 | .039% | 99.717% |
| 84.0 | 10.877 | 1.186 | 2705.675 | .039% | 99.761% |
| 85.0 | 10.849 | 1.185 | 2706.86 | .039% | 99.804% |
| 86.0 | 10.828 | 1.185 | 2708.044 | .039% | 99.848% |
| 87.0 | 10.821 | 1.185 | 2709.229 | .039% | 99.892% |
| 88.0 | 10.786 | 1.182 | 2710.411 | .039% | 99.935% |
| 89.0 | 10.688 | 1.172 | 2711.583 | .038% | 99.979% |
| 90.0 | 10.575 | 0.580 | 2712.163 | .019% | 100.000% |

## Zonal flux distribution table



ZONAL LUMEN SUMMARY

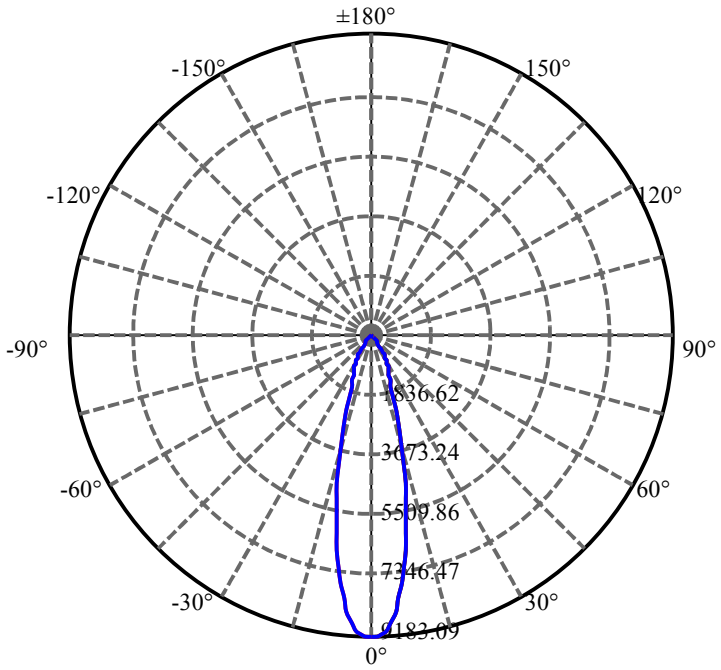
| Zone | Lumens | %Lamp | %Fixt |
|---|---|---|---|
| 0-30 | 2359.04 | 77.47% | 86.98% |
| 0-40 | 2648.19 | 86.97% | 97.64% |
| 0-60 | 2677.33 | 87.93% | 98.72% |
| 0-90 | 2711.58 | 89.05% | 99.98% |
| 0-120 | 2711.58 | 89.05% | 99.98% |
| 0-180 | 2712.16 | 89.07% | 100.00% |
| 60-90 | 35.43 | 1.16% | 1.31% |
| 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% |
| 0-26.61 | 2169.73 | 71.26% | 80.00% |

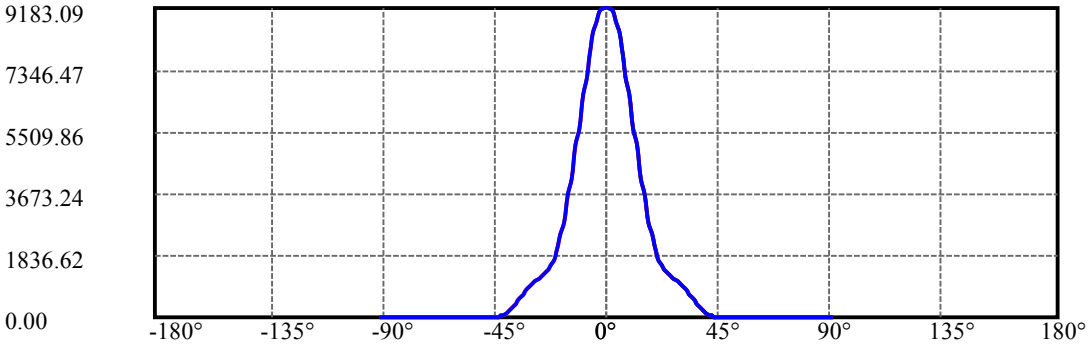
ZONAL LUMEN SUMMARY

| | |
|---|---|
| 0-10 | 788.32 |
| 10-20 | 976.05 |
| 20-30 | 594.67 |
| 30-40 | 289.16 |
| 40-50 | 17.17 |
| 50-60 | 11.96 |
| 60-70 | 11.73 |
| 70-80 | 11.85 |
| 80-90 | 10.67 |
| 90-100 | 0.00 |
| 100-110 | 0.00 |
| 110-120 | 0.00 |
| 120-130 | 0.00 |
| 130-140 | 0.00 |
| 140-150 | 0.00 |
| 150-160 | 0.00 |
| 160-170 | 0.00 |
| 170-180 | 0.00 |

Light Distribution Curve [Unit:cd]






C0(Max):

C0/C180:

C90/C270:

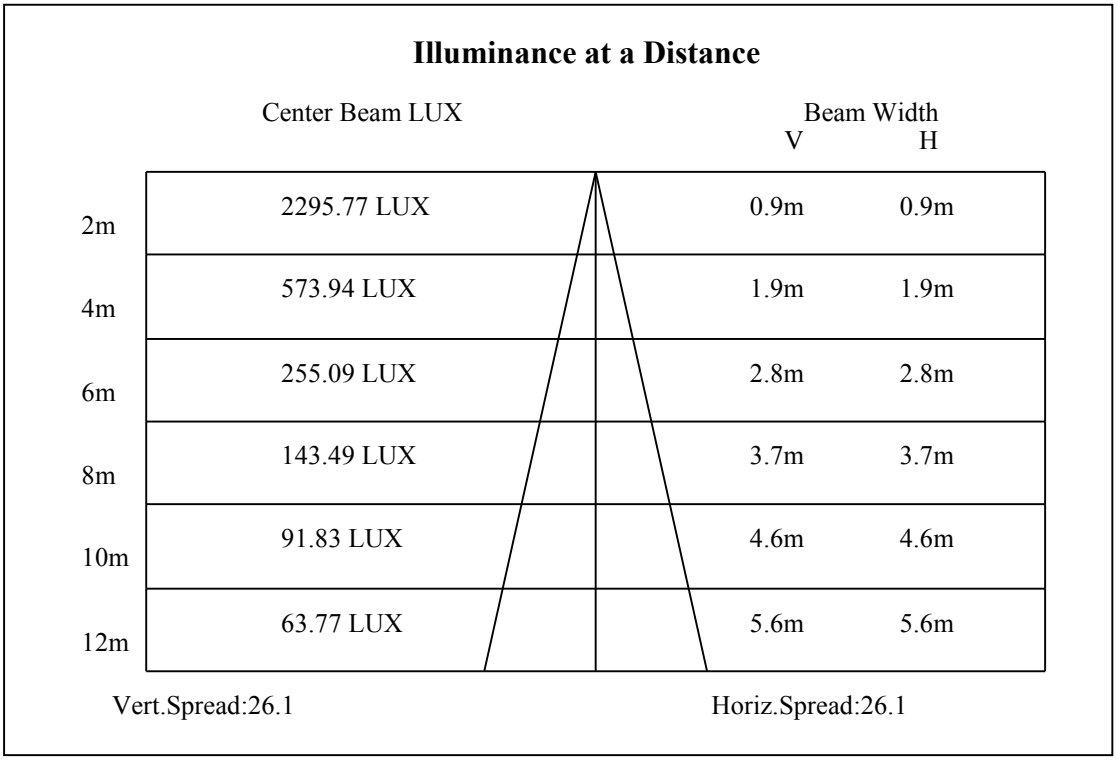
Field angle(10%Imax):C0/180Left:30.7 Right:30.7
:C90/270Left:30.7 Right:30.7

Beam Angle(50%Imax):C0/180Left:13.0 Right:13.0
:C90/270Left:13.0 Right:13.0

Equipment: GMS1980 Date: 2019/2/18 Operator: NT07
Temperature(°C): 10.0 Humidity(%): 65.0% Distance(m): 7.50

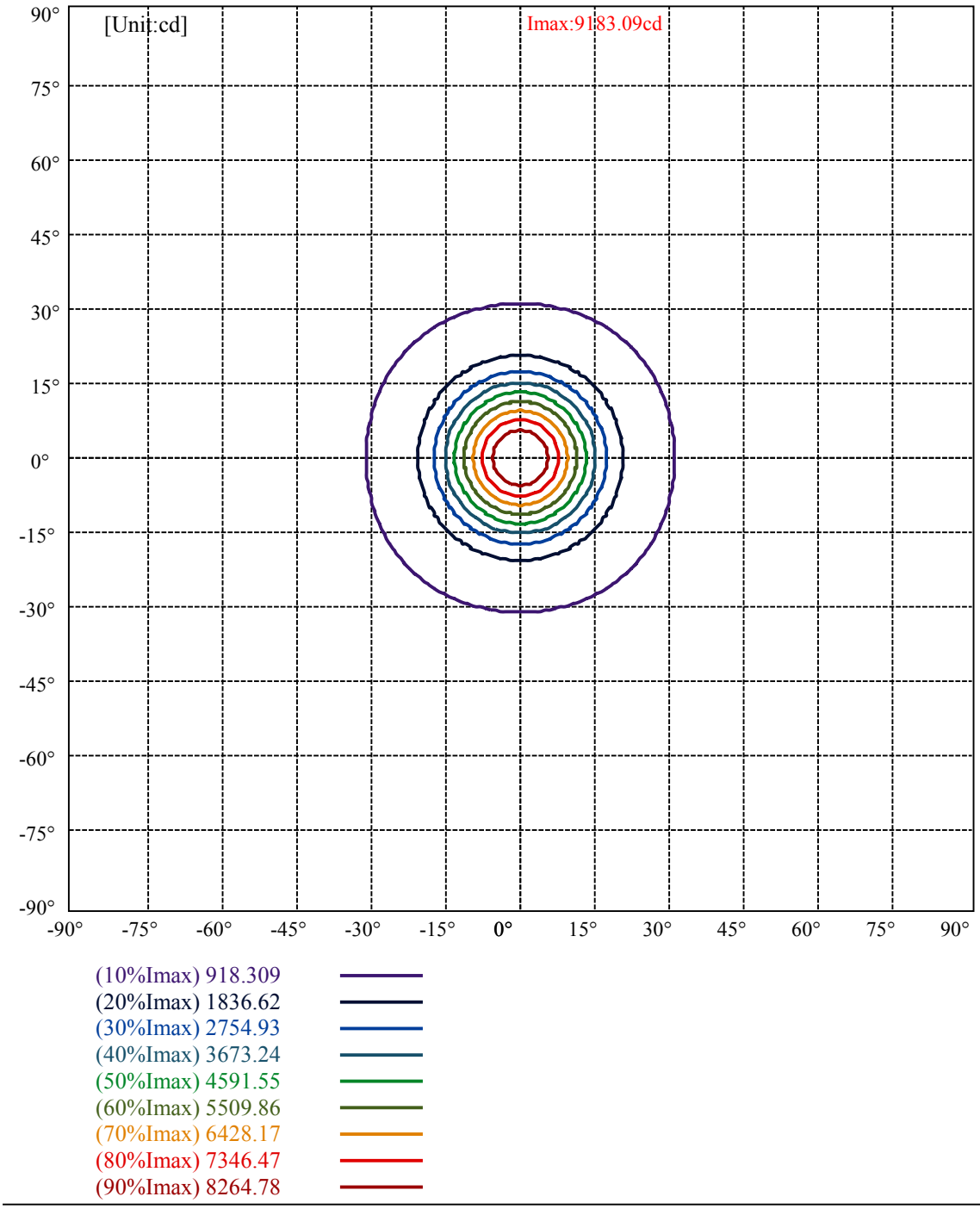
Lux distance Curve





ISO-Intensity(V-H)





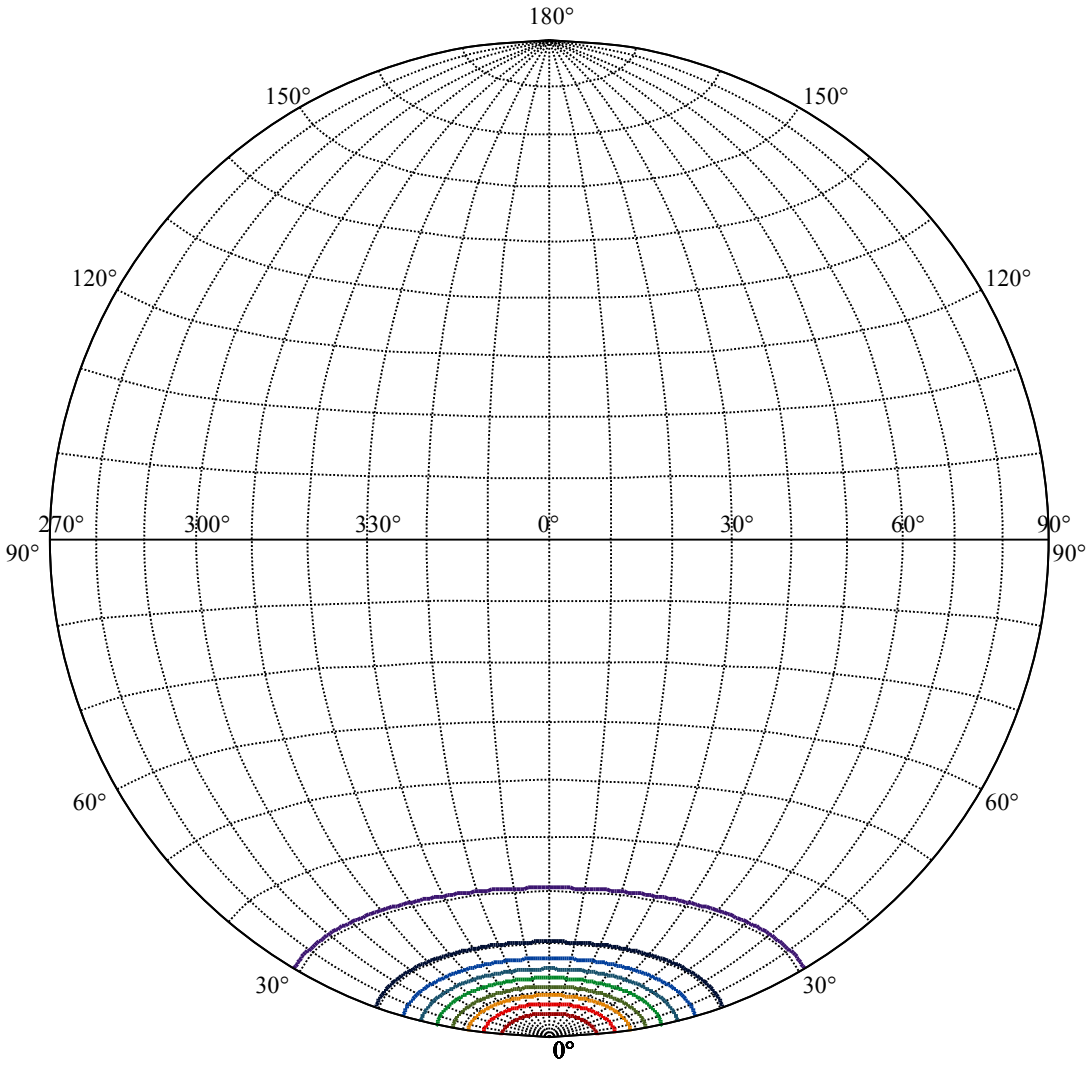

Equipment: GMS1980
Temperature(°C): 10.0

Date: 2019/2/18
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

ISO candela diagram on circular web






House [Unit:cd] Road

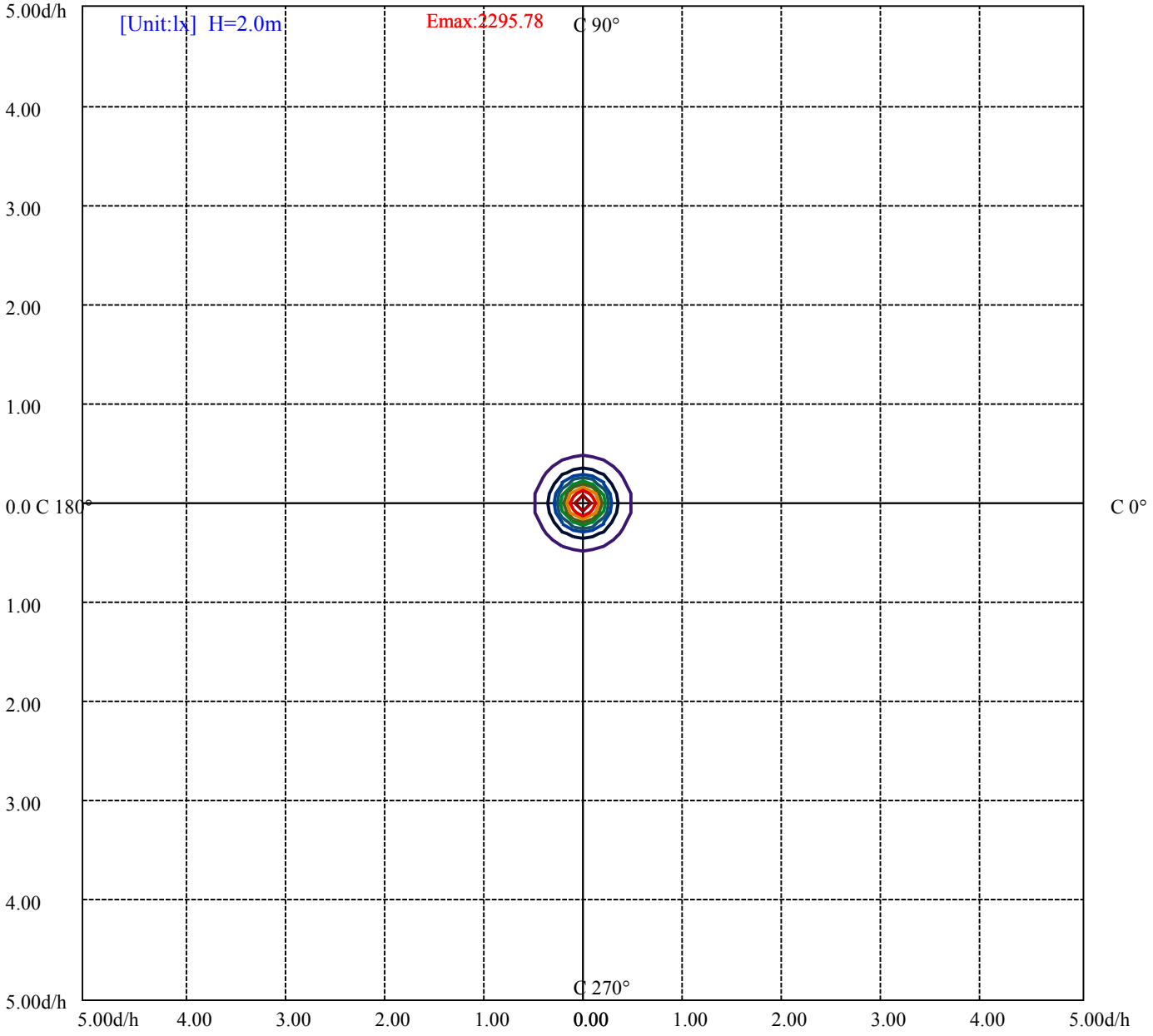
Imax:9183.09

(10%Imax) 918.309
(20%Imax) 1836.62
(30%Imax) 2754.93
(40%Imax) 3673.24
(50%Imax) 4591.55
(60%Imax) 5509.86
(70%Imax) 6428.17
(80%Imax) 7346.47
(90%Imax) 8264.78

Equipment: GMS1980 Date: 2019/2/18 Operator: NT07
Temperature(°C): 10.0 Humidity(%): 65.0% Distance(m): 7.50

## ISO illuminance diagram



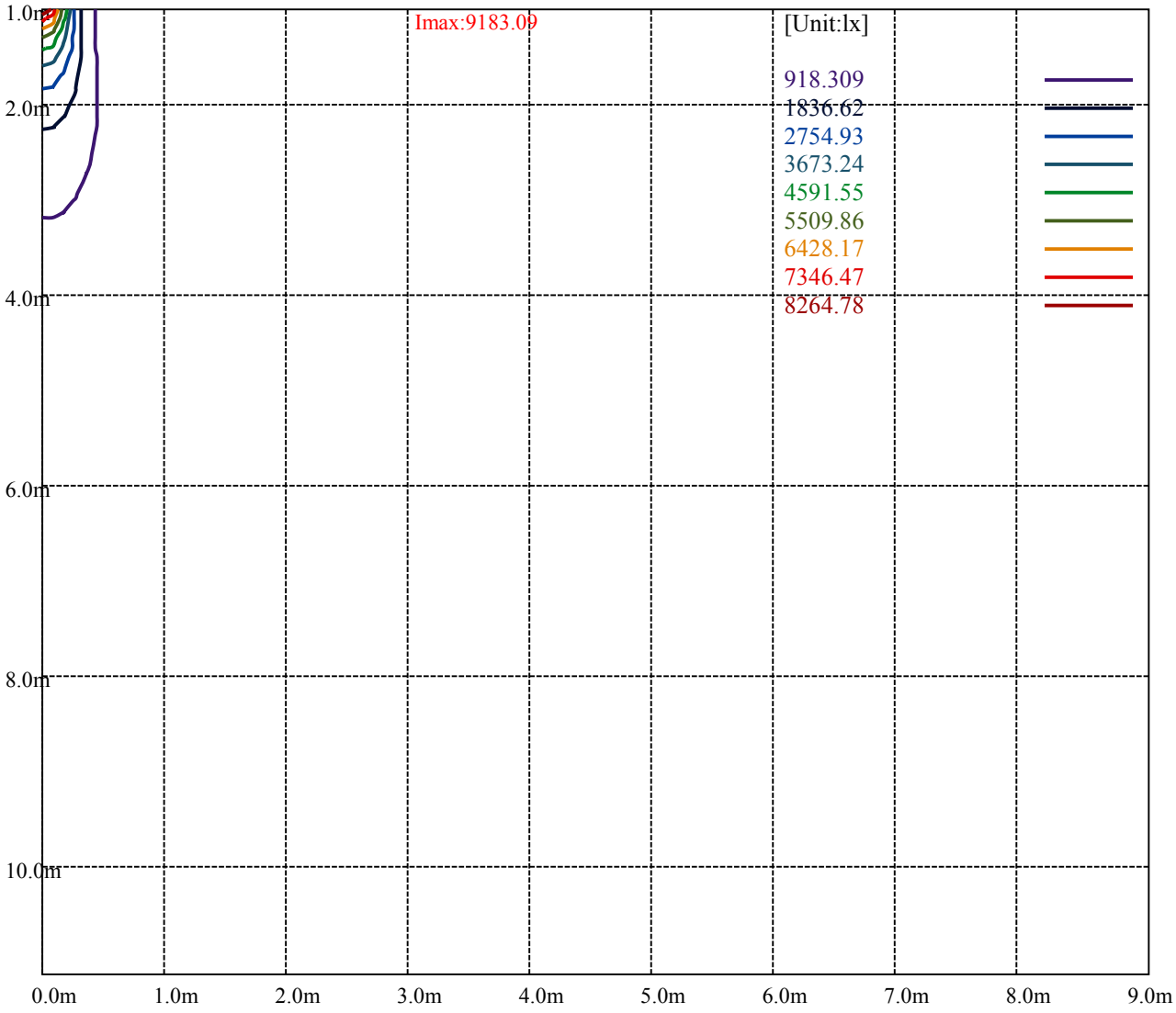



(10%Emax) 229.5773
(20%Emax) 459.155
(30%Emax) 688.7325
(40%Emax) 918.31
(50%Emax) 1147.887
(60%Emax) 1377.463
(70%Emax) 1607.04
(80%Emax) 1836.618
(90%Emax) 2066.195

Equipment: GMS1980
Temperature(°C): 10.0
Date: 2019/2/18
Humidity(%): 65.0%
Operator: NT07
Distance(m): 7.50

## Space ISO Lux diagram






Equipment: GMS1980
Temperature(°C): 10.0

Date: 2019/2/18
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

## Luminance Limitting Curve(no luminous side)



Luminance Table

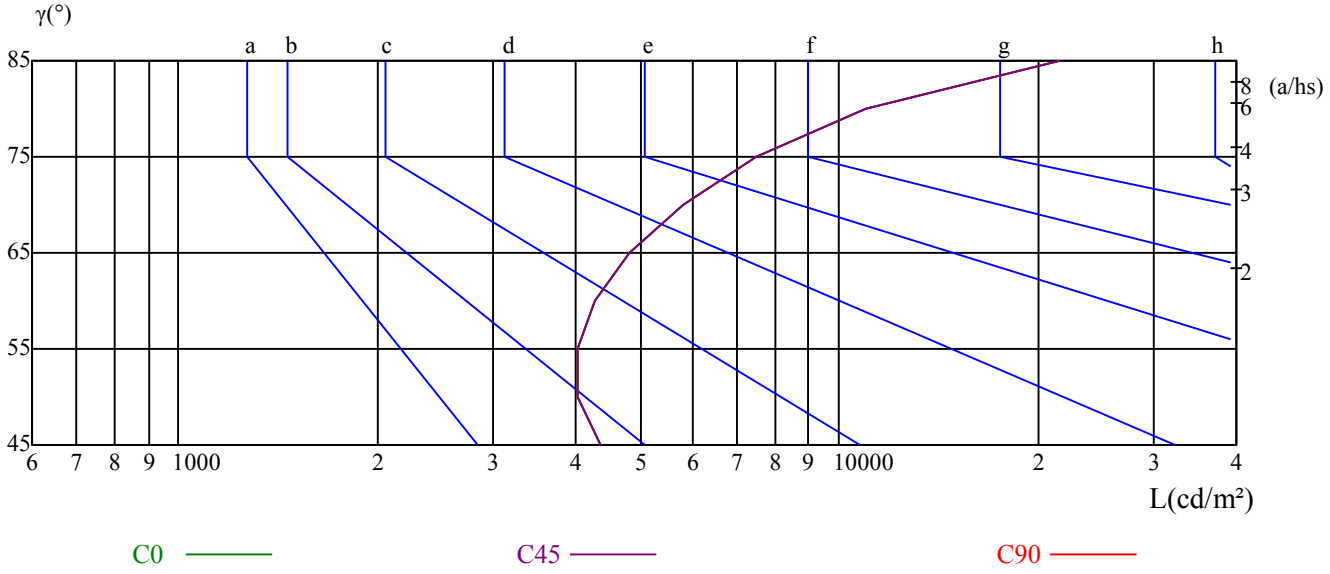
| γ | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 |
|---|---|---|---|---|---|---|---|---|---|
| C0 | 4357 | 4028 | 4013 | 4265 | 4833 | 5802 | 7483 | 10978 | 21551 |
| C45 | 4357 | 4028 | 4013 | 4265 | 4833 | 5802 | 7483 | 10978 | 21551 |
| C90 | 4357 | 4028 | 4013 | 4265 | 4833 | 5802 | 7483 | 10978 | 21551 |

| L(Hor)(65) | L(Ver)(65) | L45(65) | L(Hor)(75) | L(Ver)(75) | L45(75) | L(Hor)(85) | L(Ver)(85) | L45(85) |
|---|---|---|---|---|---|---|---|---|
| 4833 | 4833 | 4833 | 7483 | 7483 | 7483 | 21551 | 21551 | 21551 |

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

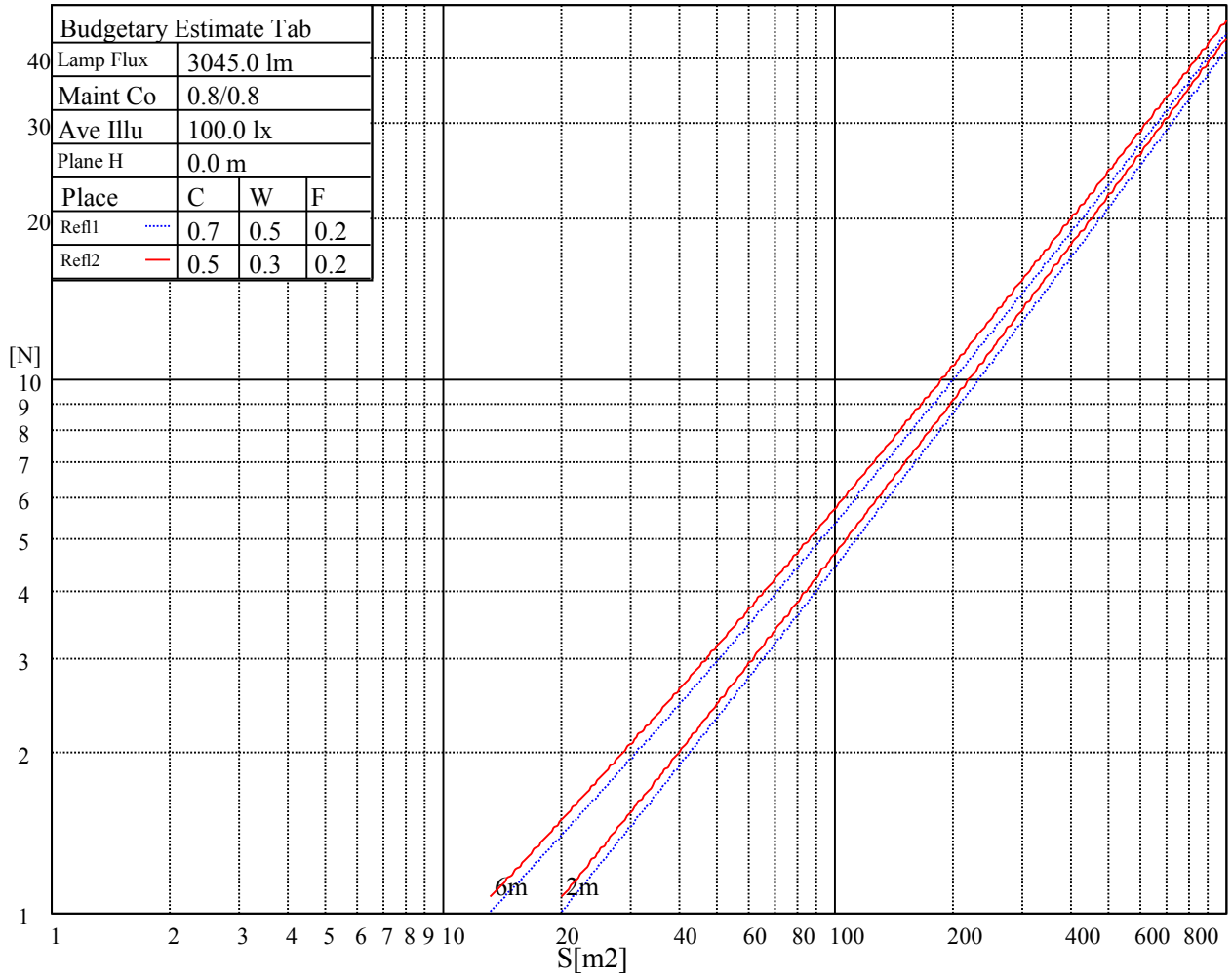


| Illumination assessment according UGR | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Rf of Ceiling | | 70 | 70 | 50 | 50 | 30 | 70 | 70 | 50 | 50 | 30 |
| Rf of Wall | | 50 | 30 | 50 | 30 | 30 | 50 | 30 | 50 | 30 | 30 |
| Rf of Floor | | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Room dimensions | | Viewed crosswise | | | | | Viewed endwise | | | | |
| X | Y | | | | | | | | | | |
| 2H | 2H | 2.40 | 3.31 | 2.76 | 3.62 | 3.94 | 2.01 | 2.92 | 2.38 | 3.23 | 3.55 |
| | 3H | 5.38 | 6.19 | 5.77 | 6.52 | 6.89 | 5.19 | 5.99 | 5.57 | 6.33 | 6.70 |
| | 4H | 7.05 | 7.79 | 7.45 | 8.14 | 8.54 | 6.90 | 7.64 | 7.31 | 8.00 | 8.39 |
| | 6H | 8.94 | 9.62 | 9.36 | 10.00 | 10.39 | 8.83 | 9.51 | 9.25 | 9.89 | 10.29 |
| | 8H | 9.99 | 10.63 | 10.43 | 11.02 | 11.43 | 9.91 | 10.54 | 10.35 | 10.94 | 11.35 |
| | 12H | 11.70 | 12.31 | 12.14 | 12.69 | 13.12 | 11.66 | 12.27 | 12.10 | 12.65 | 13.09 |
| 4H | 2H | 3.19 | 3.93 | 3.60 | 4.29 | 4.68 | 2.91 | 3.66 | 3.32 | 4.01 | 4.40 |
| | 3H | 6.46 | 7.07 | 6.88 | 7.48 | 7.89 | 6.33 | 6.94 | 6.75 | 7.35 | 7.76 |
| | 4H | 8.31 | 8.86 | 8.75 | 9.28 | 9.73 | 8.21 | 8.75 | 8.65 | 9.18 | 9.63 |
| | 6H | 10.36 | 10.83 | 10.84 | 11.28 | 11.76 | 10.29 | 10.75 | 10.76 | 11.20 | 11.68 |
| | 8H | 11.53 | 11.96 | 12.00 | 12.41 | 12.89 | 11.47 | 11.90 | 11.94 | 12.35 | 12.83 |
| | 12H | 13.15 | 13.52 | 13.64 | 14.01 | 14.49 | 13.12 | 13.49 | 13.61 | 13.98 | 14.46 |
| 8H | 4H | 9.01 | 9.44 | 9.49 | 9.89 | 10.37 | 8.93 | 9.36 | 9.40 | 9.81 | 10.29 |
| | 6H | 11.35 | 11.69 | 11.86 | 12.19 | 12.68 | 11.29 | 11.63 | 11.80 | 12.13 | 12.62 |
| | 8H | 12.70 | 13.00 | 13.23 | 13.52 | 14.02 | 12.65 | 12.95 | 13.19 | 13.48 | 13.98 |
| | 12H | 14.47 | 14.73 | 14.99 | 15.22 | 15.81 | 14.44 | 14.70 | 14.97 | 15.20 | 15.78 |
| 12H | 4H | 9.21 | 9.58 | 9.70 | 10.07 | 10.55 | 9.13 | 9.50 | 9.62 | 9.99 | 10.47 |
| | 6H | 11.85 | 11.96 | 12.19 | 12.43 | 12.98 | 11.80 | 11.90 | 12.14 | 12.38 | 12.93 |
| | 8H | 13.14 | 13.40 | 13.66 | 13.90 | 14.48 | 13.10 | 13.36 | 13.62 | 13.86 | 14.44 |

| Variation with the observer position at spacings: | | |
|---|---|---|
| S = 1.0H | 5.7/-6.7 | 5.7/-6.7 |
| S = 1.5H | 7.7/-4.9 | 7.7/-4.9 |
| S = 2.0H | 8.9/-3.6 | 8.9/-3.6 |
| Standard tables: | BK3 | BK3 |
| Uncorrected UGR | 0.8 | 0.8 |

## Budgetary Estimate Table






Equipment: GMS1980 Date: 2019/2/18 Operator: NT07
Temperature(°C): 10.0 Humidity(%): 65.0% Distance(m): 7.50

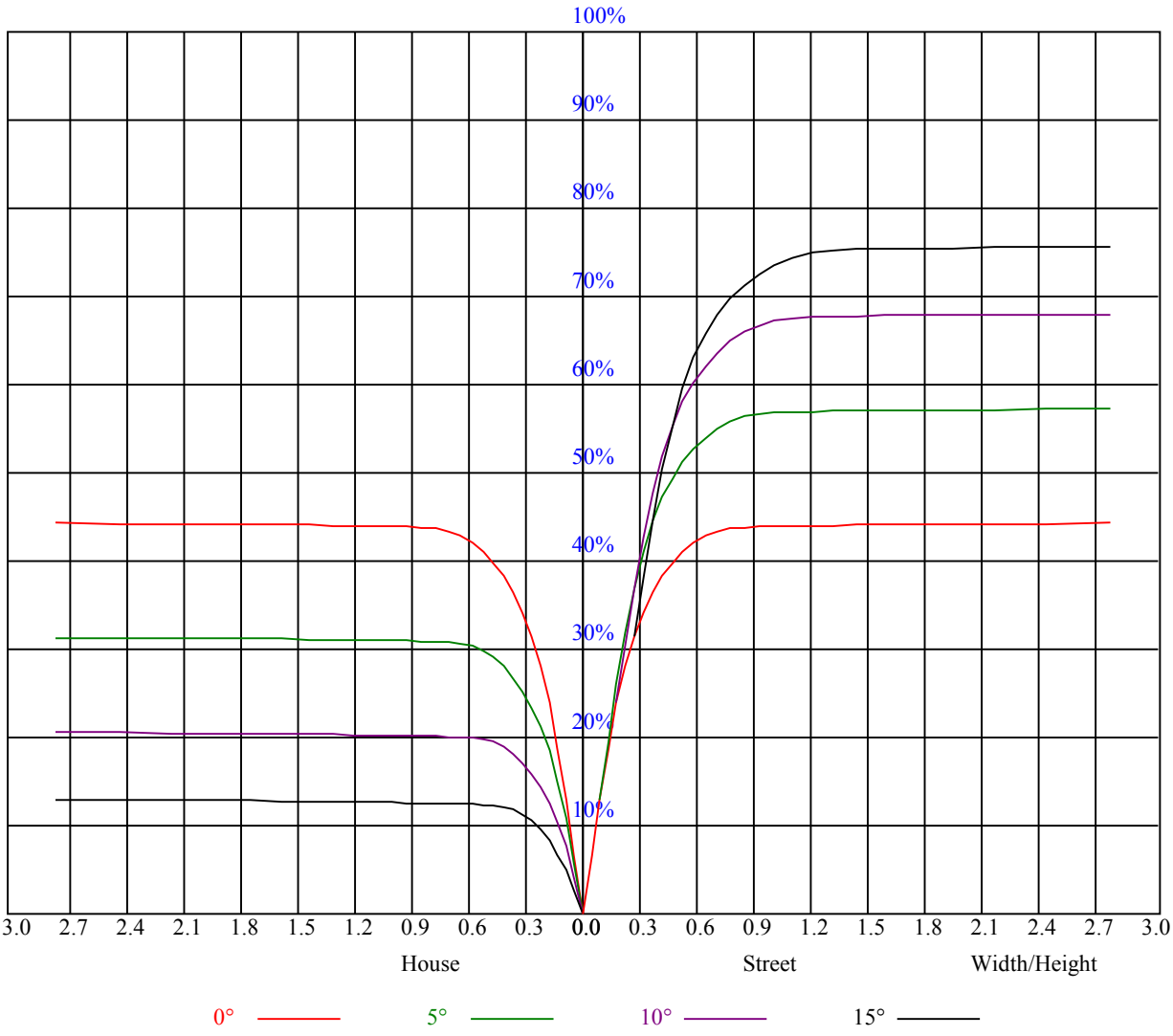
Utilization factor table for indoor luminaire



| 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 | 1.06 | 1.06 | 1.06 | 1.04 | 1.04 | 1.04 | 0.99 | 0.99 | 0.99 | 0.95 | 0.95 | 0.95 | 0.91 | 0.91 | 0.91 | 0.89 |
| 1 | 1.00 | 0.98 | 0.96 | 0.98 | 0.96 | 0.94 | 0.94 | 0.93 | 0.92 | 0.91 | 0.90 | 0.89 | 0.88 | 0.87 | 0.86 | 0.85 |
| 2 | 0.94 | 0.91 | 0.89 | 0.93 | 0.90 | 0.88 | 0.90 | 0.88 | 0.86 | 0.87 | 0.86 | 0.84 | 0.85 | 0.84 | 0.82 | 0.81 |
| 3 | 0.90 | 0.86 | 0.83 | 0.88 | 0.85 | 0.82 | 0.86 | 0.83 | 0.81 | 0.84 | 0.82 | 0.80 | 0.82 | 0.80 | 0.79 | 0.77 |
| 4 | 0.85 | 0.81 | 0.78 | 0.84 | 0.81 | 0.78 | 0.83 | 0.79 | 0.77 | 0.81 | 0.78 | 0.76 | 0.79 | 0.77 | 0.75 | 0.74 |
| 5 | 0.82 | 0.77 | 0.74 | 0.81 | 0.77 | 0.74 | 0.79 | 0.76 | 0.73 | 0.78 | 0.75 | 0.73 | 0.77 | 0.74 | 0.72 | 0.71 |
| 6 | 0.78 | 0.74 | 0.71 | 0.78 | 0.74 | 0.71 | 0.76 | 0.73 | 0.70 | 0.75 | 0.72 | 0.70 | 0.74 | 0.71 | 0.69 | 0.68 |
| 7 | 0.75 | 0.71 | 0.68 | 0.75 | 0.71 | 0.68 | 0.73 | 0.70 | 0.67 | 0.73 | 0.69 | 0.67 | 0.72 | 0.69 | 0.67 | 0.66 |
| 8 | 0.72 | 0.68 | 0.65 | 0.72 | 0.68 | 0.65 | 0.71 | 0.67 | 0.65 | 0.70 | 0.67 | 0.64 | 0.69 | 0.66 | 0.64 | 0.63 |
| 9 | 0.70 | 0.65 | 0.63 | 0.69 | 0.65 | 0.63 | 0.68 | 0.65 | 0.62 | 0.68 | 0.65 | 0.62 | 0.67 | 0.64 | 0.62 | 0.61 |
| 10 | 0.67 | 0.63 | 0.60 | 0.67 | 0.63 | 0.60 | 0.66 | 0.63 | 0.60 | 0.66 | 0.62 | 0.60 | 0.65 | 0.62 | 0.60 | 0.59 |

## Coefficient Utilization Curve






| | | |
|---|---|---|
| Equipment: GMS1980 | Date: 2019/2/18 | 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 | 9181.13 | 9160.31 | 9115.31 | 9028.69 | 8864.44 | 8527.50 | 8163.56 | 7756.31 | 7327.13 |
| 45.0 | 9199.13 | 9172.13 | 9131.06 | 9073.13 | 8949.94 | 8687.25 | 8361.56 | 7949.25 | 7559.44 |
| 90.0 | 9178.31 | 9145.13 | 9104.63 | 9017.44 | 8859.94 | 8575.31 | 8164.69 | 7733.25 | 7219.69 |
| 135.0 | 9173.81 | 9174.38 | 9149.63 | 9081.00 | 8933.63 | 8616.38 | 8268.19 | 7860.38 | 7359.75 |
| 180.0 | 9181.13 | 9189.00 | 9130.50 | 8967.94 | 8724.94 | 8343.00 | 7946.44 | 7452.56 | 6929.44 |
| 225.0 | 9199.13 | 9202.50 | 9123.19 | 8930.81 | 8653.50 | 8244.00 | 7836.75 | 7340.63 | 6822.56 |
| 270.0 | 9178.31 | 9182.81 | 9137.81 | 9013.50 | 8782.31 | 8406.00 | 7965.56 | 7531.31 | 7135.31 |
| 315.0 | 9173.81 | 9155.25 | 9081.00 | 8911.69 | 8655.19 | 8263.13 | 7806.94 | 7370.44 | 6859.13 |
| 360.0 | 9181.13 | 9160.31 | 9115.31 | 9028.69 | 8864.44 | 8527.50 | 8163.56 | 7756.31 | 7327.13 |

| C/γ(°) | 9.0 | 10.0 | 11.0 | 12.0 | 13.0 | 14.0 | 15.0 | 16.0 | 17.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 6773.06 | 6314.06 | 5788.13 | 5313.38 | 4786.31 | 4327.31 | 3828.38 | 3344.06 | 2949.19 |
| 45.0 | 6934.50 | 6473.81 | 5999.06 | 5449.50 | 4899.38 | 4484.25 | 3920.06 | 3425.06 | 3075.19 |
| 90.0 | 6751.13 | 6221.81 | 5680.13 | 5203.13 | 4731.19 | 4160.25 | 3727.13 | 3308.06 | 2820.38 |
| 135.0 | 6843.38 | 6375.94 | 5834.81 | 5349.94 | 4809.38 | 4287.38 | 3843.00 | 3405.94 | 2923.88 |
| 180.0 | 6447.94 | 5904.00 | 5367.38 | 4895.44 | 4441.50 | 3885.75 | 3456.56 | 3053.25 | 2646.00 |
| 225.0 | 6354.00 | 5821.31 | 5278.50 | 4803.19 | 4337.44 | 3780.00 | 3352.50 | 2952.00 | 2531.25 |
| 270.0 | 6505.88 | 6036.75 | 5619.94 | 4970.25 | 4502.25 | 4098.94 | 3540.38 | 3060.00 | 2688.19 |
| 315.0 | 6395.63 | 5868.00 | 5328.00 | 4858.31 | 4388.63 | 3830.63 | 3402.00 | 2992.50 | 2551.50 |
| 360.0 | 6773.06 | 6314.06 | 5788.13 | 5313.38 | 4786.31 | 4327.31 | 3828.38 | 3344.06 | 2949.19 |

| C/γ(°) | 18.0 | 19.0 | 20.0 | 21.0 | 22.0 | 23.0 | 24.0 | 25.0 | 26.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 2560.50 | 2265.19 | 1995.19 | 1785.38 | 1629.00 | 1488.38 | 1377.56 | 1301.63 | 1248.19 |
| 45.0 | 2621.25 | 2305.69 | 2048.06 | 1790.44 | 1620.56 | 1484.44 | 1356.19 | 1276.88 | 1218.94 |
| 90.0 | 2479.50 | 2196.00 | 1935.56 | 1725.19 | 1570.50 | 1432.69 | 1355.63 | 1277.44 | 1206.00 |
| 135.0 | 2571.75 | 2286.56 | 2006.44 | 1815.75 | 1651.50 | 1509.75 | 1399.50 | 1321.31 | 1262.25 |
| 180.0 | 2314.69 | 2076.19 | 1851.75 | 1666.69 | 1541.25 | 1427.63 | 1346.63 | 1274.63 | 1209.38 |
| 225.0 | 2255.06 | 2027.25 | 1815.19 | 1645.31 | 1526.06 | 1417.50 | 1341.00 | 1270.69 | 1207.13 |
| 270.0 | 2334.94 | 2079.00 | 1870.88 | 1658.81 | 1522.13 | 1415.25 | 1307.81 | 1238.06 | 1177.88 |
| 315.0 | 2259.56 | 2014.31 | 1791.56 | 1605.94 | 1481.06 | 1361.25 | 1299.94 | 1235.81 | 1172.81 |
| 360.0 | 2560.50 | 2265.19 | 1995.19 | 1785.38 | 1629.00 | 1488.38 | 1377.56 | 1301.63 | 1248.19 |

| C/γ(°) | 27.0 | 28.0 | 29.0 | 30.0 | 31.0 | 32.0 | 33.0 | 34.0 | 35.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 1174.50 | 1129.50 | 1091.81 | 1011.94 | 921.38 | 844.31 | 730.69 | 626.63 | 546.75 |
| 45.0 | 1153.69 | 1112.06 | 1074.38 | 1005.19 | 927.00 | 846.00 | 744.75 | 652.50 | 565.31 |
| 90.0 | 1121.96 | 1106.83 | 1056.71 | 978.86 | 897.53 | 787.61 | 700.20 | 613.97 | 529.14 |
| 135.0 | 1195.88 | 1146.38 | 1105.88 | 1028.81 | 945.00 | 839.25 | 746.44 | 660.38 | 560.25 |
| 180.0 | 1121.29 | 1109.70 | 1052.44 | 966.26 | 881.72 | 768.99 | 679.11 | 590.79 | 501.98 |
| 225.0 | 1119.99 | 1107.79 | 1029.04 | 961.65 | 876.32 | 752.74 | 672.30 | 578.19 | 470.76 |
| 270.0 | 1112.63 | 1071.00 | 1019.81 | 942.75 | 854.44 | 770.06 | 673.31 | 573.19 | 484.31 |
| 315.0 | 1121.34 | 1093.39 | 1010.48 | 944.38 | 861.86 | 738.17 | 658.24 | 565.88 | 461.19 |
| 360.0 | 1174.50 | 1129.50 | 1091.81 | 1011.94 | 921.38 | 844.31 | 730.69 | 626.63 | 546.75 |

| C/γ(°) | 36.0 | 37.0 | 38.0 | 39.0 | 40.0 | 41.0 | 42.0 | 43.0 | 44.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 432.00 | 344.81 | 293.06 | 167.18 | 104.57 | 57.32 | 34.14 | 29.36 | 23.12 |
| 45.0 | 454.50 | 365.63 | 292.50 | 184.22 | 118.69 | 64.69 | 35.72 | 31.22 | 25.48 |
| 90.0 | 419.34 | 333.23 | 253.13 | 162.51 | 98.89 | 52.43 | 34.65 | 29.64 | 24.19 |
| 135.0 | 458.44 | 368.44 | 285.75 | 186.13 | 116.61 | 61.59 | 30.71 | 26.89 | 21.49 |
| 180.0 | 391.33 | 305.61 | 224.94 | 135.39 | 75.09 | 37.41 | 28.86 | 22.73 | 16.54 |
| 225.0 | 367.71 | 281.76 | 191.70 | 114.30 | 62.10 | 32.46 | 27.84 | 20.98 | 15.81 |
| 270.0 | 384.75 | 299.81 | 239.29 | 132.69 | 79.82 | 41.06 | 31.50 | 25.76 | 21.94 |
| 315.0 | 360.11 | 277.43 | 192.43 | 118.29 | 67.05 | 35.78 | 30.77 | 23.91 | 21.09 |
| 360.0 | 432.00 | 344.81 | 293.06 | 167.18 | 104.57 | 57.32 | 34.14 | 29.36 | 23.12 |

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 | 19.69 | 17.89 | 16.93 | 16.20 | 15.81 | 15.41 | 14.91 | 14.40 | 13.89 |
| 45.0 | 21.54 | 19.29 | 18.45 | 17.55 | 17.16 | 16.76 | 16.43 | 15.98 | 15.30 |
| 90.0 | 19.86 | 19.24 | 18.62 | 18.11 | 17.61 | 16.71 | 16.09 | 15.69 | 15.24 |
| 135.0 | 15.13 | 14.23 | 13.95 | 13.67 | 13.28 | 13.11 | 12.83 | 12.71 | 12.54 |
| 180.0 | 13.56 | 13.28 | 12.99 | 12.66 | 12.43 | 12.26 | 12.15 | 11.98 | 11.93 |
| 225.0 | 15.19 | 14.91 | 14.74 | 14.34 | 14.12 | 13.78 | 13.50 | 13.28 | 12.99 |
| 270.0 | 18.79 | 17.94 | 17.16 | 16.71 | 16.31 | 15.92 | 15.41 | 14.96 | 14.57 |
| 315.0 | 18.62 | 17.66 | 16.99 | 16.48 | 16.31 | 15.69 | 15.36 | 14.96 | 14.57 |
| 360.0 | 19.69 | 17.89 | 16.93 | 16.20 | 15.81 | 15.41 | 14.91 | 14.40 | 13.89 |

| C/γ(°) | 54.0 | 55.0 | 56.0 | 57.0 | 58.0 | 59.0 | 60.0 | 61.0 | 62.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 13.50 | 13.16 | 12.94 | 12.71 | 12.54 | 12.49 | 12.38 | 12.32 | 12.21 |
| 45.0 | 14.91 | 14.51 | 14.06 | 13.67 | 13.16 | 13.05 | 12.71 | 12.66 | 12.38 |
| 90.0 | 14.85 | 14.46 | 14.06 | 13.56 | 13.16 | 12.99 | 12.94 | 12.71 | 12.49 |
| 135.0 | 12.38 | 12.26 | 12.26 | 12.15 | 12.04 | 11.98 | 11.87 | 11.81 | 11.70 |
| 180.0 | 11.81 | 11.70 | 11.64 | 11.64 | 11.59 | 11.53 | 11.53 | 11.48 | 11.48 |
| 225.0 | 12.83 | 12.66 | 12.66 | 12.54 | 12.26 | 12.09 | 12.04 | 11.98 | 11.93 |
| 270.0 | 14.23 | 13.73 | 13.28 | 12.94 | 12.94 | 12.71 | 12.54 | 12.26 | 12.15 |
| 315.0 | 14.18 | 13.89 | 13.56 | 13.11 | 12.88 | 12.60 | 12.54 | 12.26 | 12.15 |
| 360.0 | 13.50 | 13.16 | 12.94 | 12.71 | 12.54 | 12.49 | 12.38 | 12.32 | 12.21 |

| C/γ(°) | 63.0 | 64.0 | 65.0 | 66.0 | 67.0 | 68.0 | 69.0 | 70.0 | 71.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 12.09 | 11.98 | 11.98 | 11.87 | 11.76 | 11.64 | 11.53 | 11.48 | 11.36 |
| 45.0 | 12.26 | 11.98 | 11.93 | 11.81 | 11.76 | 11.70 | 11.64 | 11.59 | 11.48 |
| 90.0 | 12.38 | 12.21 | 12.15 | 12.04 | 11.93 | 11.87 | 11.76 | 11.64 | 11.53 |
| 135.0 | 11.70 | 11.64 | 11.64 | 11.53 | 11.48 | 11.48 | 11.48 | 11.42 | 11.36 |
| 180.0 | 11.48 | 11.48 | 11.48 | 11.48 | 11.42 | 11.48 | 11.42 | 11.36 | 11.36 |
| 225.0 | 11.81 | 11.76 | 11.64 | 11.59 | 11.53 | 11.48 | 11.42 | 11.42 | 11.31 |
| 270.0 | 11.98 | 11.87 | 11.81 | 11.64 | 11.59 | 11.53 | 11.48 | 11.36 | 11.31 |
| 315.0 | 11.98 | 11.93 | 11.76 | 11.70 | 11.64 | 11.53 | 11.53 | 11.42 | 11.36 |
| 360.0 | 12.09 | 11.98 | 11.98 | 11.87 | 11.76 | 11.64 | 11.53 | 11.48 | 11.36 |

| C/γ(°) | 72.0 | 73.0 | 74.0 | 75.0 | 76.0 | 77.0 | 78.0 | 79.0 | 80.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 11.25 | 11.19 | 11.14 | 11.08 | 11.03 | 11.03 | 10.97 | 10.91 | 10.91 |
| 45.0 | 11.36 | 11.31 | 11.25 | 11.14 | 11.14 | 11.08 | 11.03 | 11.03 | 10.91 |
| 90.0 | 11.53 | 11.42 | 11.36 | 11.36 | 11.36 | 11.31 | 11.31 | 11.19 | 11.19 |
| 135.0 | 11.36 | 11.31 | 11.31 | 11.25 | 11.25 | 11.19 | 11.14 | 11.14 | 11.08 |
| 180.0 | 11.31 | 11.25 | 11.25 | 11.19 | 11.14 | 11.14 | 11.08 | 11.03 | 11.03 |
| 225.0 | 11.31 | 11.31 | 11.25 | 11.25 | 11.25 | 11.19 | 11.14 | 11.14 | 11.14 |
| 270.0 | 11.25 | 11.19 | 11.14 | 11.14 | 11.14 | 11.14 | 11.08 | 11.03 | 10.97 |
| 315.0 | 11.19 | 11.14 | 11.08 | 11.08 | 10.97 | 10.91 | 10.91 | 10.86 | 10.86 |
| 360.0 | 11.25 | 11.19 | 11.14 | 11.08 | 11.03 | 11.03 | 10.97 | 10.91 | 10.91 |

| C/γ(°) | 81.0 | 82.0 | 83.0 | 84.0 | 85.0 | 86.0 | 87.0 | 88.0 | 89.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 10.91 | 10.86 | 10.86 | 10.86 | 10.86 | 10.80 | 10.80 | 10.74 | 10.74 |
| 45.0 | 10.97 | 10.91 | 10.91 | 10.86 | 10.86 | 10.86 | 10.80 | 10.74 | 10.74 |
| 90.0 | 11.14 | 11.08 | 11.03 | 10.91 | 10.86 | 10.80 | 10.74 | 10.69 | 10.58 |
| 135.0 | 11.08 | 11.03 | 10.97 | 10.91 | 10.86 | 10.86 | 10.86 | 10.80 | 10.80 |
| 180.0 | 11.08 | 11.19 | 11.42 | 10.97 | 10.97 | 11.03 | 11.14 | 11.19 | 10.86 |
| 225.0 | 11.08 | 11.08 | 10.97 | 10.91 | 10.86 | 10.80 | 10.74 | 10.69 | 10.58 |
| 270.0 | 10.91 | 10.86 | 10.80 | 10.80 | 10.74 | 10.69 | 10.63 | 10.63 | 10.58 |
| 315.0 | 10.86 | 10.80 | 10.80 | 10.80 | 10.80 | 10.80 | 10.86 | 10.80 | 10.63 |
| 360.0 | 10.91 | 10.86 | 10.86 | 10.86 | 10.86 | 10.80 | 10.80 | 10.74 | 10.74 |

Intensity data(cd)



| C/γ(°) | 90.0 |
|---|---|
| 0.0 | 10.58 |
| 45.0 | 10.63 |
| 90.0 | 10.58 |
| 135.0 | 10.58 |
| 180.0 | 10.52 |
| 225.0 | 10.63 |
| 270.0 | 10.52 |
| 315.0 | 10.58 |
| 360.0 | 10.58 |