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

Nata

Client:
LumCAT: 2-2759-L
Luminaire: 92.70.412.00
Report No: 2024812-B007
Ballast type: AC

| | |
|---|---|
| Test No: 2024812-C007 | Voltage(V): 36.730 |
| LampCAT: P2141-036-1206-P3090-1 | Current(A): 0.695 |
| Lamp flux(lm): 3141.0 | Power (W): 25.510 |
| Number of Lamps: 1 | PF: 0.000 |
| Length(mm): 0 | Width(mm): 0 |
| Phm Type: C | Height(mm): 0 |

## Photometric Results

Lumens(lm): 2904.16, Efficiency(%): 92.46% , Luminous Efficacy(lm/W): 113.84
Central intensity(cd): 5859.405, Maximum intensity(cd): 5859.405
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=39.4
[C90/270]Total=39.4
Field angle(10%Imax): [C0/180]Total=67.8
[C90/270]Total=67.8
Maximum s/h(1/2): C0_180=0.62 C90_270=0.62
Maximum s/h(1/4): C0_180=0.66 C90_270=0.66
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 92.46%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 99.130%

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 0.0 | 5859.405 | 0.000 | 0 | 0.00% | 0.00% |
| 1.0 | 5847.854 | 5.602 | 5.602 | 0.18% | 0.19% |
| 2.0 | 5816.586 | 16.742 | 22.344 | 0.53% | 0.77% |
| 3.0 | 5762.598 | 27.694 | 50.037 | 0.88% | 1.72% |
| 4.0 | 5699.234 | 38.366 | 88.404 | 1.22% | 3.04% |
| 5.0 | 5594.273 | 48.584 | 136.988 | 1.55% | 4.72% |
| 6.0 | 5477.407 | 58.185 | 195.172 | 1.85% | 6.72% |
| 7.0 | 5343.826 | 67.167 | 262.34 | 2.14% | 9.03% |
| 8.0 | 5189.292 | 75.384 | 337.723 | 2.40% | 11.63% |
| 9.0 | 5014.890 | 82.699 | 420.422 | 2.63% | 14.48% |
| 10.0 | 4832.701 | 89.117 | 509.539 | 2.84% | 17.55% |
| 11.0 | 4639.442 | 94.646 | 604.186 | 3.01% | 20.80% |
| 12.0 | 4439.764 | 99.249 | 703.434 | 3.16% | 24.22% |
| 13.0 | 4236.472 | 102.965 | 806.399 | 3.28% | 27.77% |
| 14.0 | 4036.242 | 105.890 | 912.289 | 3.37% | 31.41% |
| 15.0 | 3833.495 | 108.039 | 1020.329 | 3.44% | 35.13% |
| 16.0 | 3640.025 | 109.508 | 1129.837 | 3.49% | 38.90% |
| 17.0 | 3425.866 | 110.035 | 1239.872 | 3.50% | 42.69% |
| 18.0 | 3237.055 | 109.857 | 1349.729 | 3.50% | 46.48% |
| 19.0 | 3053.678 | 109.446 | 1459.175 | 3.48% | 50.24% |
| 20.0 | 2866.411 | 108.354 | 1567.529 | 3.45% | 53.98% |
| 21.0 | 2675.228 | 106.411 | 1673.939 | 3.39% | 57.64% |
| 22.0 | 2486.916 | 103.735 | 1777.675 | 3.30% | 61.21% |
| 23.0 | 2307.849 | 100.607 | 1878.282 | 3.20% | 64.68% |
| 24.0 | 2131.101 | 97.051 | 1975.333 | 3.09% | 68.02% |
| 25.0 | 1973.768 | 93.336 | 2068.669 | 2.97% | 71.23% |
| 26.0 | 1794.911 | 88.960 | 2157.629 | 2.83% | 74.29% |
| 27.0 | 1601.934 | 83.105 | 2240.734 | 2.65% | 77.16% |
| 28.0 | 1449.713 | 77.261 | 2317.995 | 2.46% | 79.82% |
| 29.0 | 1298.622 | 71.904 | 2389.899 | 2.29% | 82.29% |
| 30.0 | 1123.997 | 65.410 | 2455.309 | 2.08% | 84.54% |
| 31.0 | 1001.289 | 59.144 | 2514.453 | 1.88% | 86.58% |
| 32.0 | 846.834 | 52.947 | 2567.399 | 1.69% | 88.40% |
| 33.0 | 711.466 | 45.908 | 2613.308 | 1.46% | 89.99% |
| 34.0 | 579.015 | 39.054 | 2652.361 | 1.24% | 91.33% |
| 35.0 | 479.423 | 32.871 | 2685.232 | 1.05% | 92.46% |
| 36.0 | 395.920 | 27.871 | 2713.104 | 0.89% | 93.42% |
| 37.0 | 324.987 | 23.512 | 2736.616 | 0.75% | 94.23% |

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 38.0 | 282.103 | 20.264 | 2756.879 | 0.65% | 94.93% |
| 39.0 | 235.296 | 17.660 | 2774.54 | 0.56% | 95.54% |
| 40.0 | 202.747 | 15.277 | 2789.817 | 0.49% | 96.06% |
| 41.0 | 165.539 | 13.114 | 2802.931 | 0.42% | 96.51% |
| 42.0 | 129.606 | 10.723 | 2813.655 | 0.34% | 96.88% |
| 43.0 | 108.292 | 8.812 | 2822.467 | 0.28% | 97.19% |
| 44.0 | 88.167 | 7.415 | 2829.882 | 0.24% | 97.44% |
| 45.0 | 73.883 | 6.228 | 2836.11 | 0.20% | 97.66% |
| 46.0 | 62.083 | 5.317 | 2841.427 | 0.17% | 97.84% |
| 47.0 | 53.147 | 4.583 | 2846.01 | 0.15% | 98.00% |
| 48.0 | 46.268 | 4.019 | 2850.029 | 0.13% | 98.14% |
| 49.0 | 40.808 | 3.576 | 2853.605 | 0.11% | 98.26% |
| 50.0 | 36.452 | 3.221 | 2856.826 | 0.10% | 98.37% |
| 51.0 | 32.917 | 2.935 | 2859.761 | 0.09% | 98.47% |
| 52.0 | 30.039 | 2.702 | 2862.462 | 0.09% | 98.56% |
| 53.0 | 27.431 | 2.500 | 2864.962 | 0.08% | 98.65% |
| 54.0 | 25.335 | 2.326 | 2867.288 | 0.07% | 98.73% |
| 55.0 | 23.627 | 2.186 | 2869.474 | 0.07% | 98.81% |
| 56.0 | 22.089 | 2.066 | 2871.54 | 0.07% | 98.88% |
| 57.0 | 20.920 | 1.966 | 2873.506 | 0.06% | 98.94% |
| 58.0 | 19.632 | 1.875 | 2875.381 | 0.06% | 99.01% |
| 59.0 | 18.587 | 1.787 | 2877.168 | 0.06% | 99.07% |
| 60.0 | 17.694 | 1.714 | 2878.882 | 0.05% | 99.13% |
| 61.0 | 16.925 | 1.652 | 2880.534 | 0.05% | 99.19% |
| 62.0 | 16.196 | 1.596 | 2882.13 | 0.05% | 99.24% |
| 63.0 | 15.453 | 1.539 | 2883.669 | 0.05% | 99.29% |
| 64.0 | 14.888 | 1.489 | 2885.158 | 0.05% | 99.35% |
| 65.0 | 14.179 | 1.439 | 2886.597 | 0.05% | 99.40% |
| 66.0 | 13.587 | 1.385 | 2887.982 | 0.04% | 99.44% |
| 67.0 | 12.970 | 1.335 | 2889.318 | 0.04% | 99.49% |
| 68.0 | 12.267 | 1.278 | 2890.596 | 0.04% | 99.53% |
| 69.0 | 11.544 | 1.215 | 2891.811 | 0.04% | 99.57% |
| 70.0 | 10.880 | 1.152 | 2892.962 | 0.04% | 99.61% |
| 71.0 | 10.243 | 1.092 | 2894.054 | 0.03% | 99.65% |
| 72.0 | 9.468 | 1.025 | 2895.079 | 0.03% | 99.69% |
| 73.0 | 8.752 | 0.953 | 2896.032 | 0.03% | 99.72% |
| 74.0 | 7.990 | 0.880 | 2896.912 | 0.03% | 99.75% |
| 75.0 | 7.392 | 0.813 | 2897.725 | 0.03% | 99.78% |

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 76.0 | 6.846 | 0.756 | 2898.48 | 0.02% | 99.80% |
| 77.0 | 6.288 | 0.700 | 2899.181 | 0.02% | 99.83% |
| 78.0 | 5.874 | 0.651 | 2899.832 | 0.02% | 99.85% |
| 79.0 | 5.375 | 0.604 | 2900.436 | 0.02% | 99.87% |
| 80.0 | 4.901 | 0.554 | 2900.99 | 0.02% | 99.89% |
| 81.0 | 4.435 | 0.505 | 2901.495 | 0.02% | 99.91% |
| 82.0 | 3.942 | 0.454 | 2901.949 | 0.01% | 99.92% |
| 83.0 | 3.548 | 0.407 | 2902.356 | 0.01% | 99.94% |
| 84.0 | 3.101 | 0.362 | 2902.719 | 0.01% | 99.95% |
| 85.0 | 2.733 | 0.318 | 2903.037 | 0.01% | 99.96% |
| 86.0 | 2.411 | 0.281 | 2903.318 | 0.01% | 99.97% |
| 87.0 | 2.142 | 0.249 | 2903.567 | 0.01% | 99.98% |
| 88.0 | 1.879 | 0.220 | 2903.788 | 0.01% | 99.99% |
| 89.0 | 1.662 | 0.194 | 2903.982 | 0.01% | 99.99% |
| 90.0 | 1.537 | 0.175 | 2904.157 | 0.01% | 100.00% |

## Zonal flux distribution table



ZONAL LUMEN SUMMARY

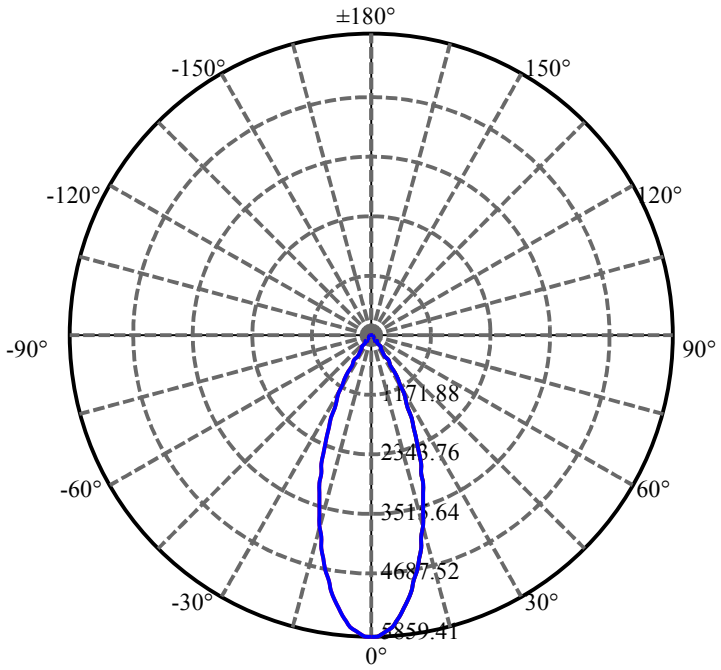
| Zone | Lumens | %Lamp | %Fixt |
|---|---|---|---|
| 0-30 | 2455.31 | 78.17% | 84.54% |
| 0-40 | 2789.82 | 88.82% | 96.06% |
| 0-60 | 2878.88 | 91.65% | 99.13% |
| 0-90 | 2903.98 | 92.45% | 99.99% |
| 0-120 | 2903.98 | 92.45% | 99.99% |
| 0-180 | 2904.16 | 92.46% | 100.00% |
| 60-90 | 25.10 | 0.80% | 0.86% |
| 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% |
| 0-28.07 | 2323.33 | 73.97% | 80.00% |

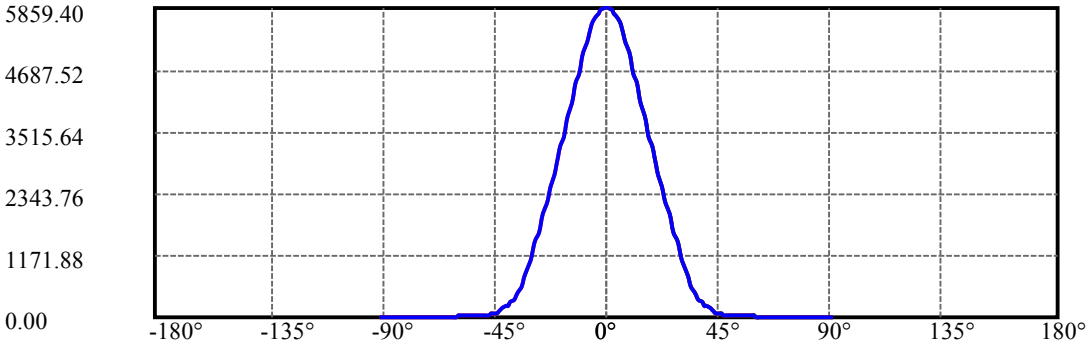
ZONAL LUMEN SUMMARY

| | |
|---|---|
| 0-10 | 509.54 |
| 10-20 | 1057.99 |
| 20-30 | 887.78 |
| 30-40 | 334.51 |
| 40-50 | 67.01 |
| 50-60 | 22.06 |
| 60-70 | 14.08 |
| 70-80 | 8.03 |
| 80-90 | 2.99 |
| 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:

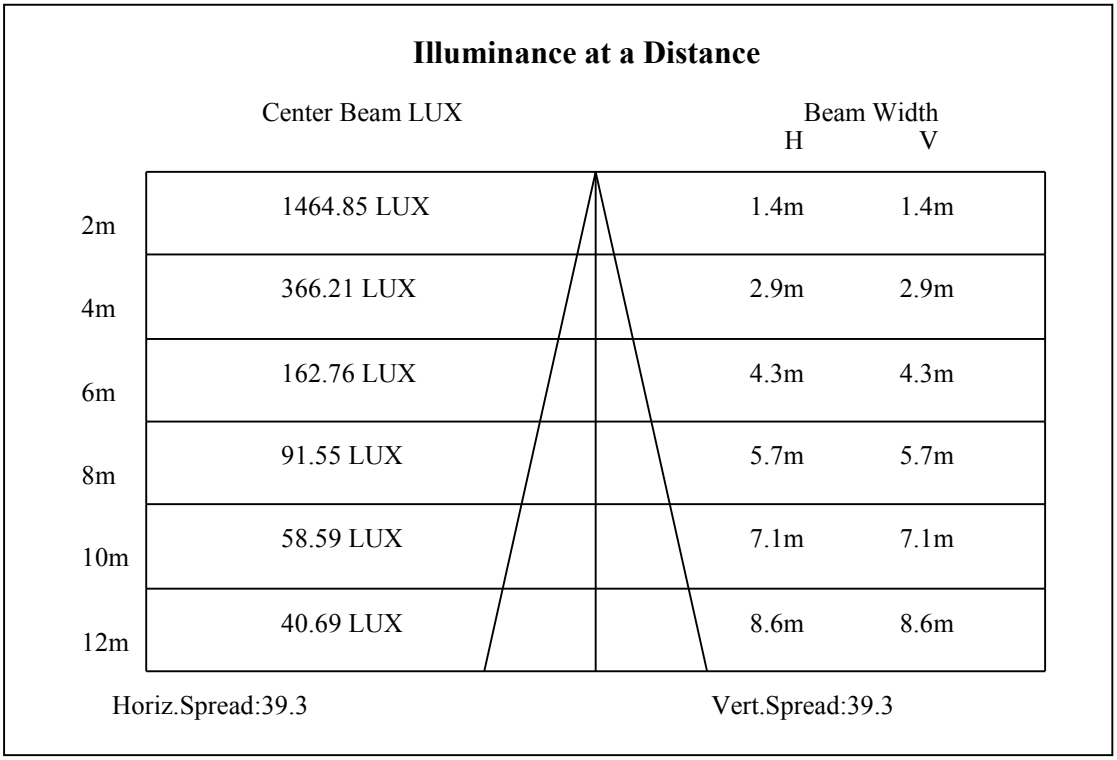
C90/C270:

Field angle(10%Imax):C0/180Left:33.9 Right:33.9
:C90/270Left:33.9 Right:33.9

Beam Angle(50%Imax):C0/180Left:19.7 Right:19.7
:C90/270Left:19.7 Right:19.7

Lux distance Curve





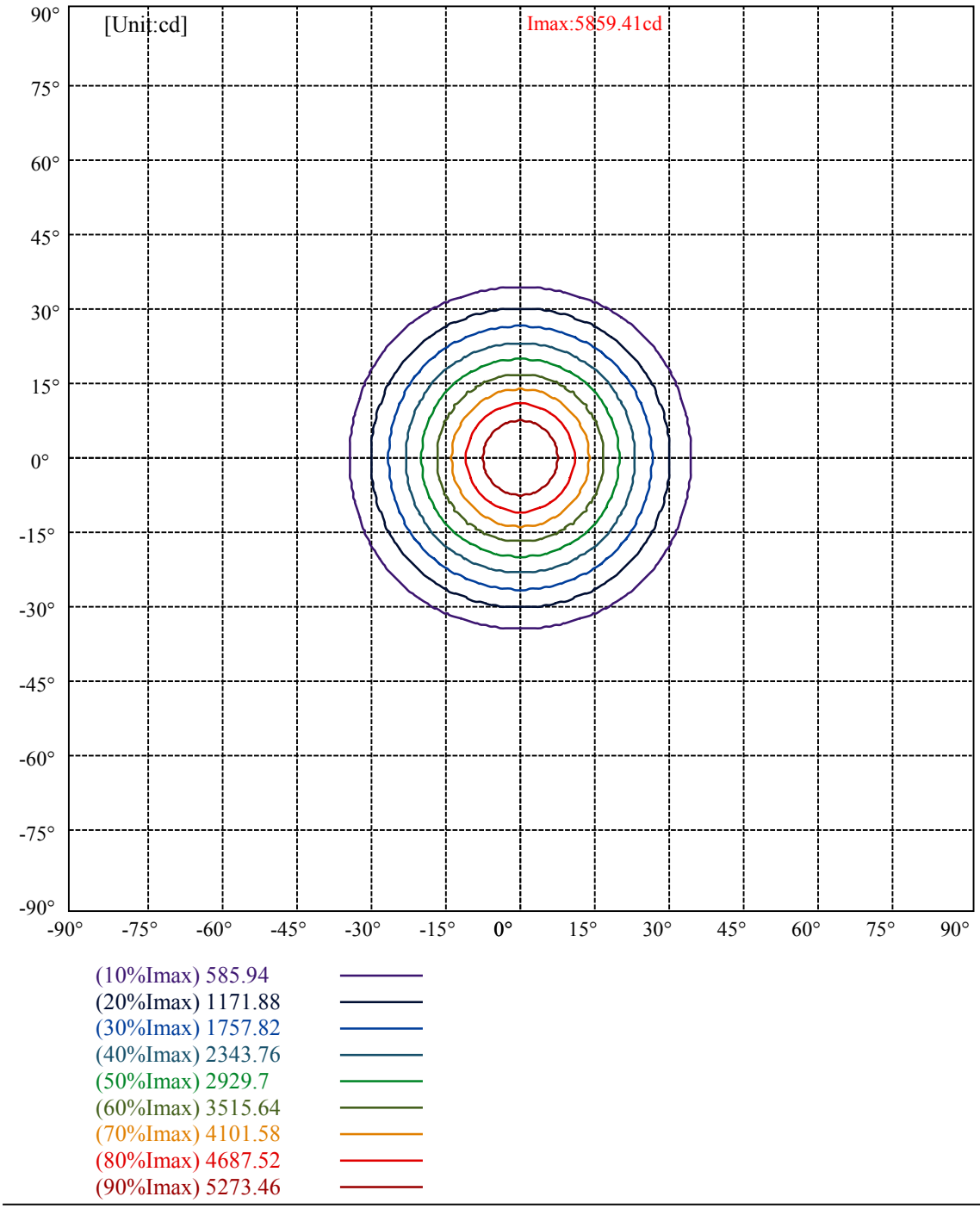

Equipment: GMS 1800
Temperature(°C): 25.0

Date: 2024/8/12
Humidity(%): 60.0%

Operator: NT
Distance(m): 7.25

ISO-Intensity(V-H)





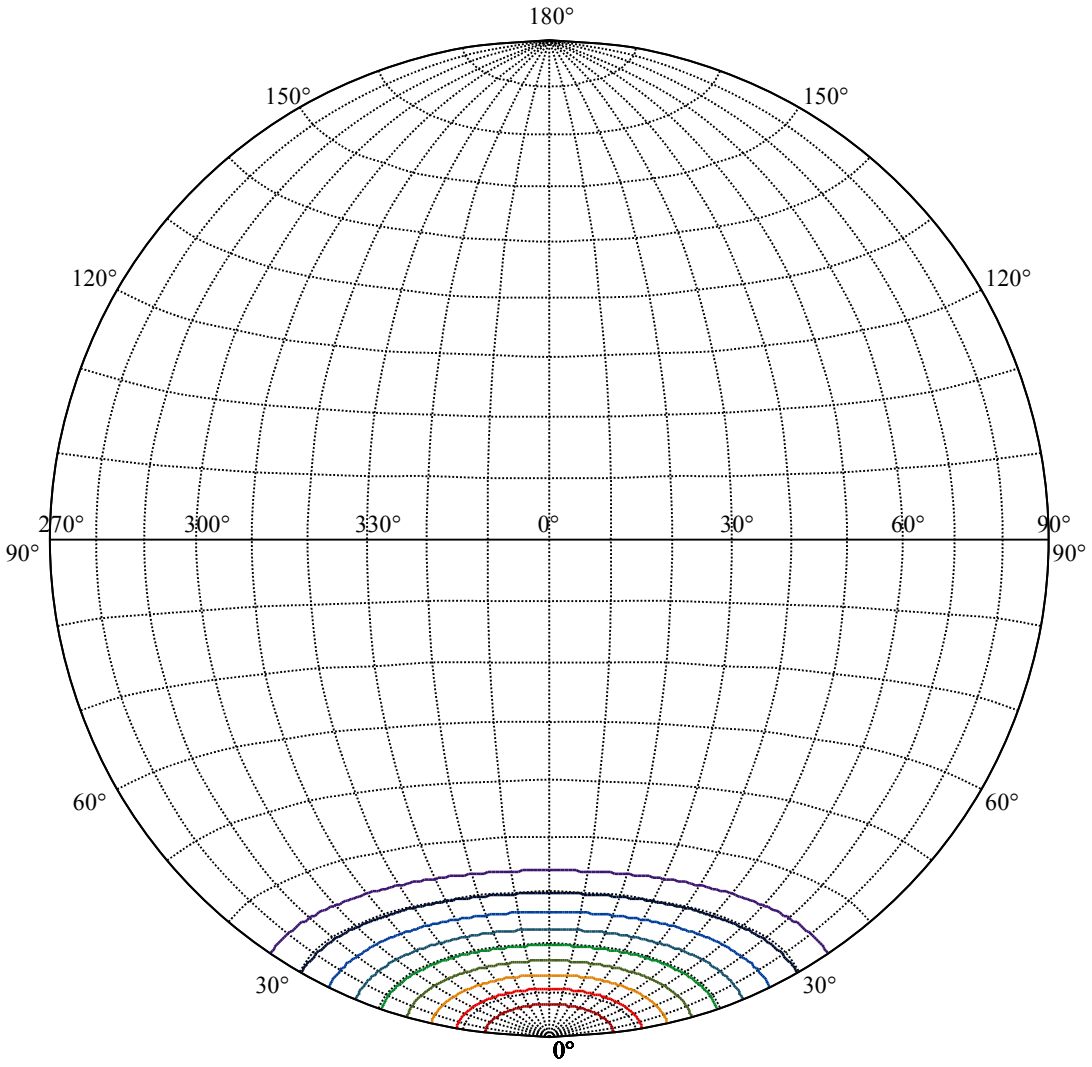

Equipment: GMS 1800
Temperature(°C): 25.0

Date: 2024/8/12
Humidity(%): 60.0%

Operator: NT
Distance(m): 7.25

ISO candela diagram on circular web





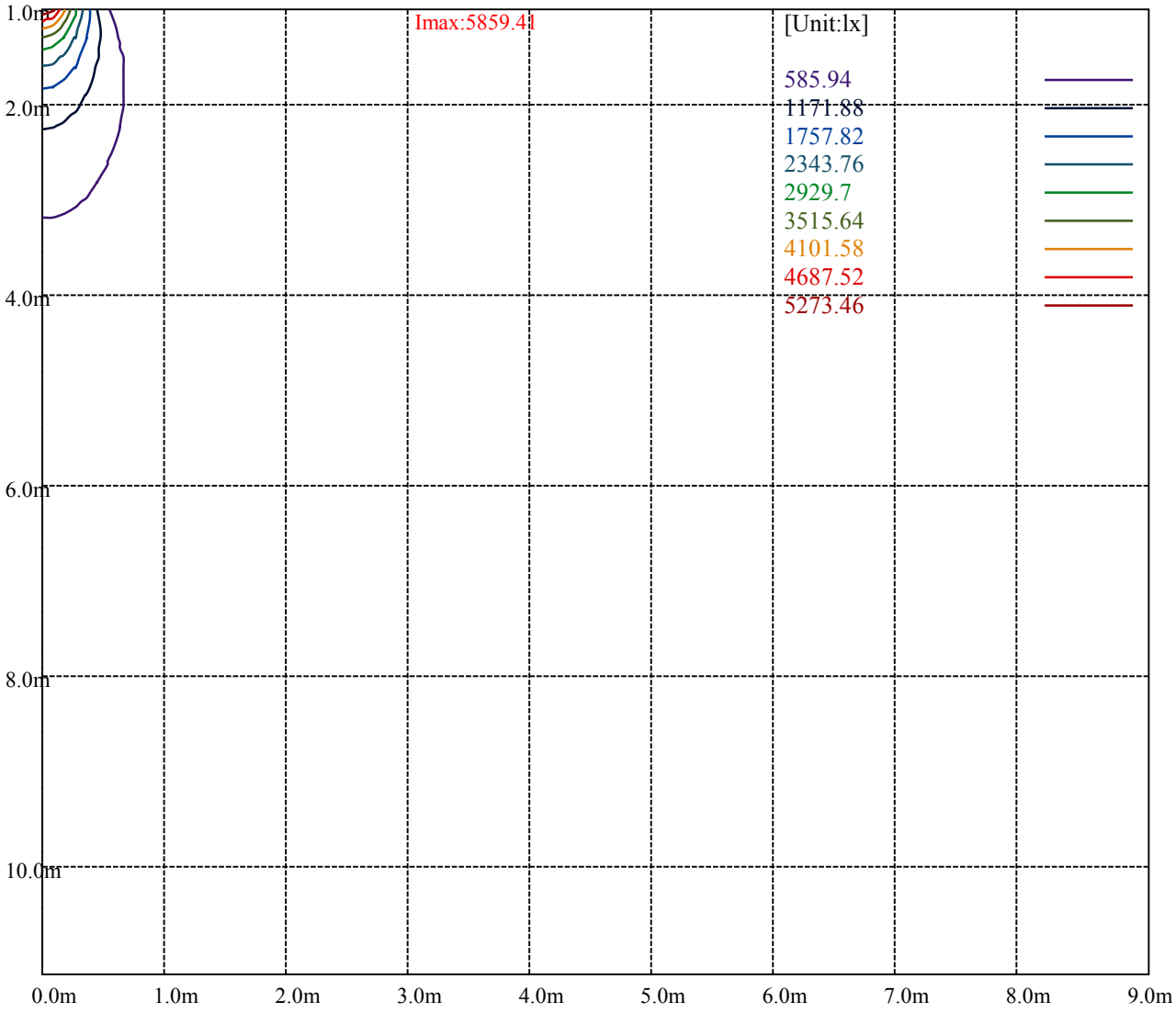

House [Unit:cd] Road

Imax:5859.41

(10%Imax) 585.94
(20%Imax) 1171.88
(30%Imax) 1757.82
(40%Imax) 2343.76
(50%Imax) 2929.7
(60%Imax) 3515.64
(70%Imax) 4101.58
(80%Imax) 4687.52
(90%Imax) 5273.46

Space ISO Lux diagram






Equipment: GMS 1800
Temperature(°C): 25.0

Date: 2024/8/12
Humidity(%): 60.0%

Operator: NT
Distance(m): 7.25

Nata 2-2759-L

## Luminance Limitting Curve(no luminous side)



Luminance Table

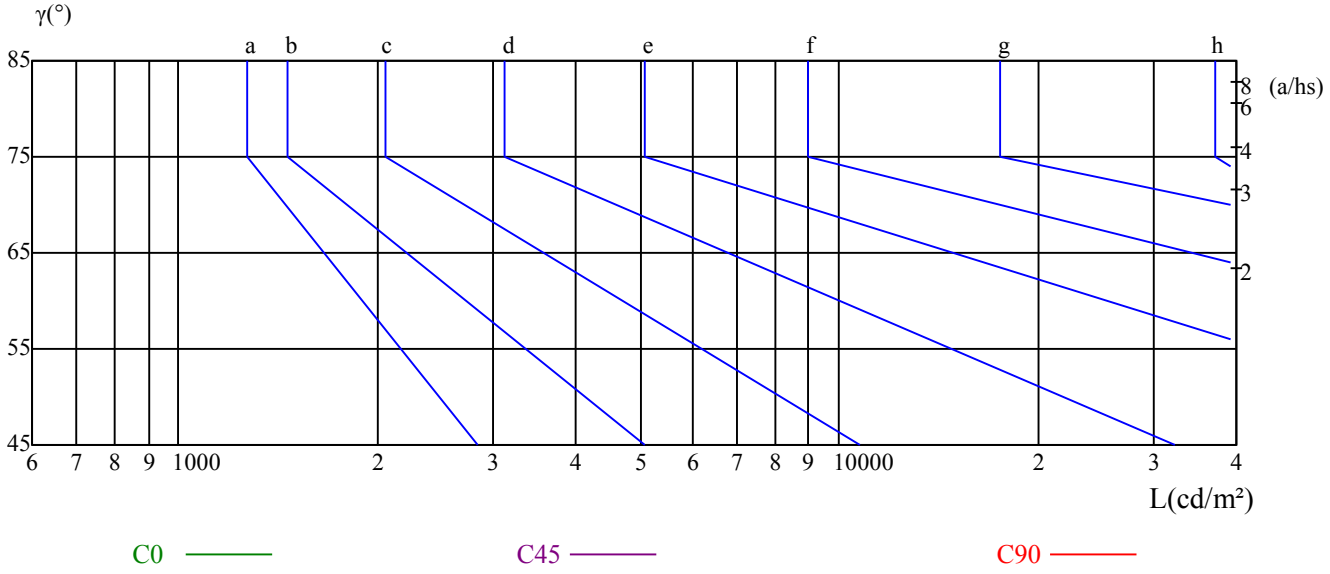
| γ | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 |
|---|---|---|---|---|---|---|---|---|---|
| C0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C90 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| 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




Equipment: GMS 1800
Temperature(°C): 25.0

Date: 2024/8/12
Humidity(%): 60.0%

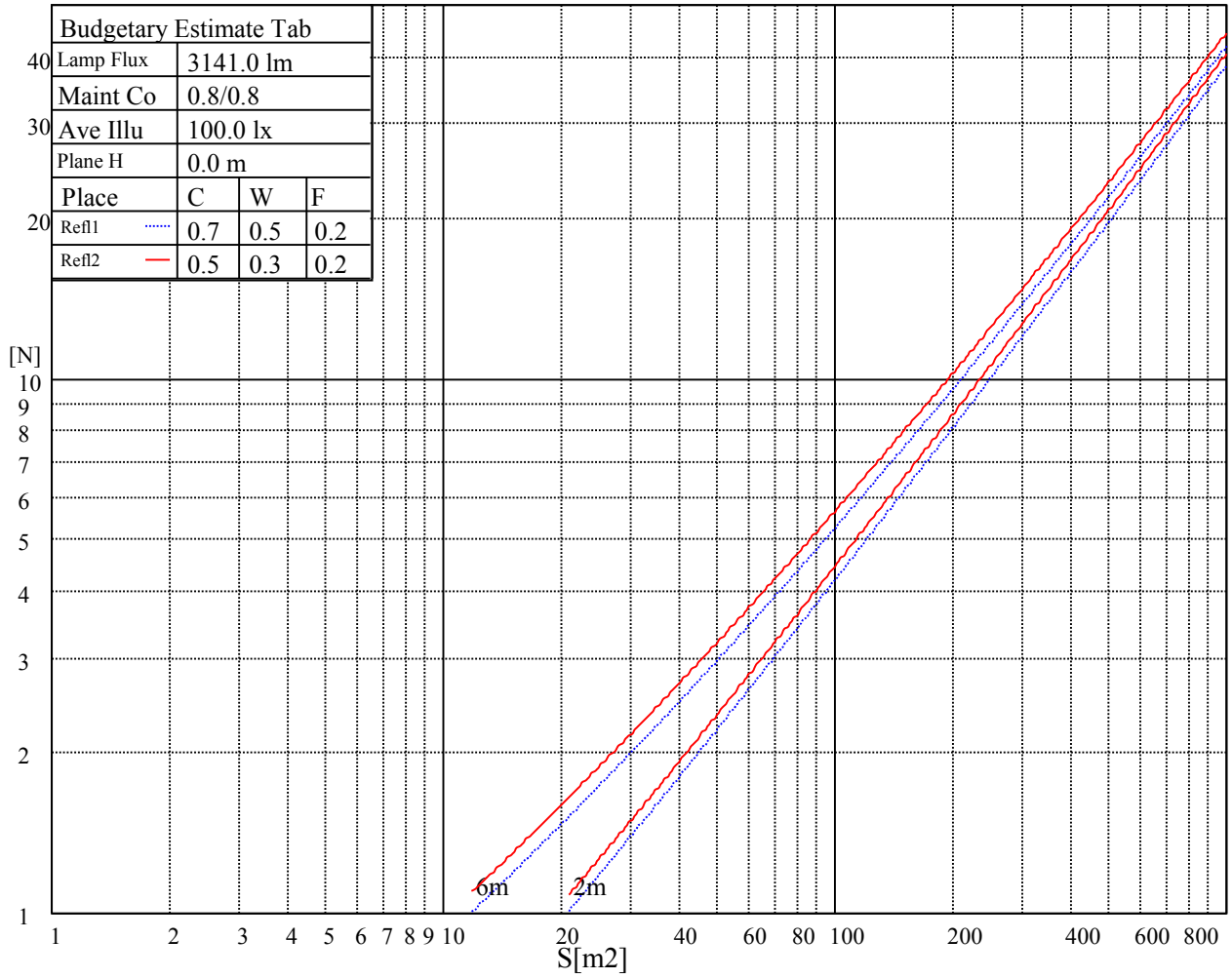
Operator: NT
Distance(m): 7.25

| 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: GMS 1800
Temperature(°C): 25.0

Date: 2024/8/12
Humidity(%): 60.0%

Operator: NT
Distance(m): 7.25

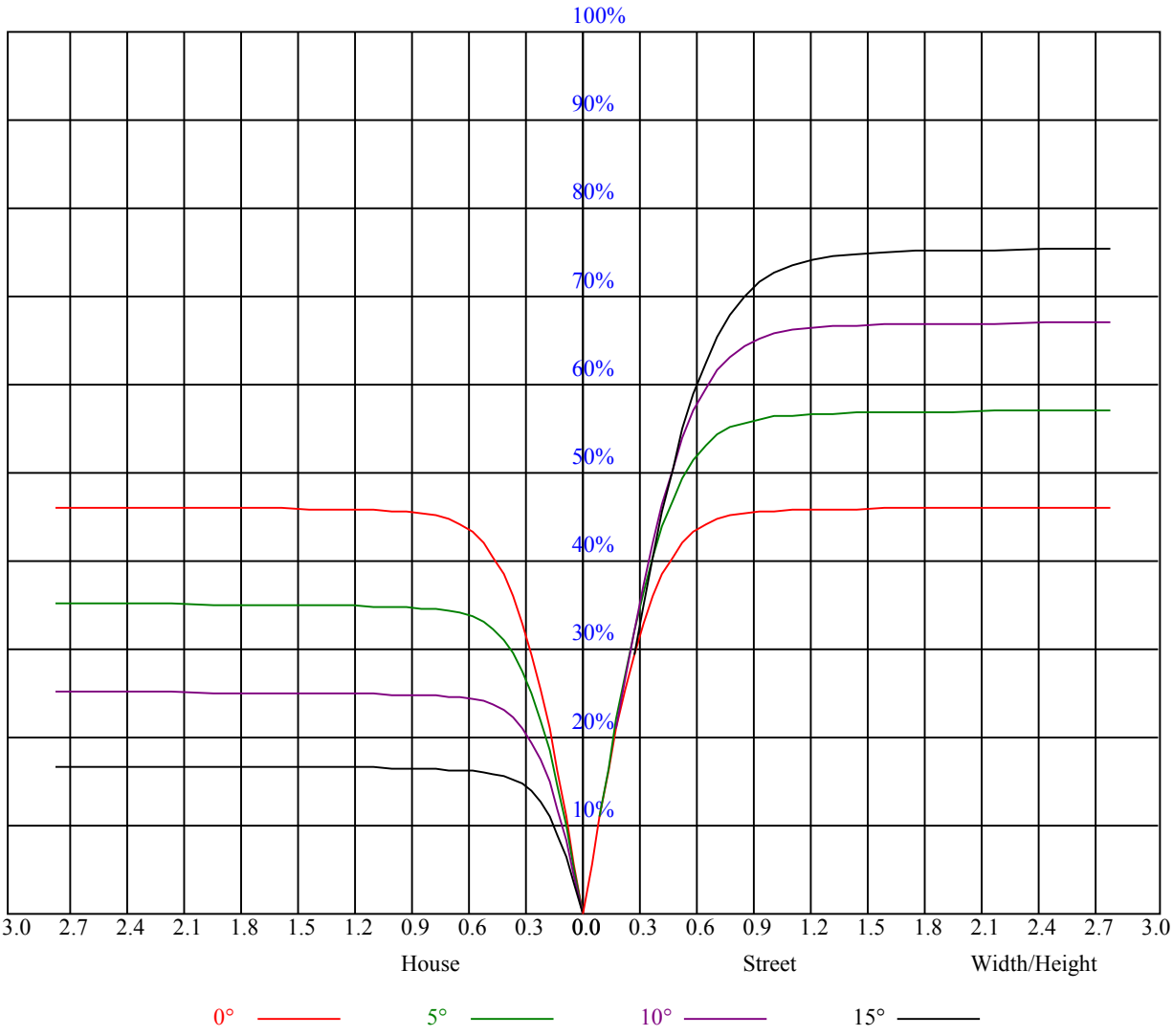
Utilization factor table for indoor luminaire



| 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 | 1.10 | 1.10 | 1.10 | 1.08 | 1.08 | 1.08 | 1.03 | 1.03 | 1.03 | 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 | 0.98 | 0.97 | 0.96 | 0.95 | 0.94 | 0.93 | 0.92 | 0.91 | 0.90 | 0.89 | 0.87 |
| 2 | 0.97 | 0.93 | 0.91 | 0.95 | 0.92 | 0.90 | 0.92 | 0.90 | 0.88 | 0.90 | 0.88 | 0.86 | 0.87 | 0.85 | 0.84 | 0.83 |
| 3 | 0.91 | 0.87 | 0.84 | 0.90 | 0.86 | 0.83 | 0.88 | 0.85 | 0.82 | 0.85 | 0.83 | 0.81 | 0.83 | 0.81 | 0.79 | 0.78 |
| 4 | 0.86 | 0.82 | 0.78 | 0.85 | 0.81 | 0.78 | 0.83 | 0.80 | 0.77 | 0.82 | 0.79 | 0.76 | 0.80 | 0.77 | 0.75 | 0.74 |
| 5 | 0.82 | 0.77 | 0.74 | 0.81 | 0.77 | 0.73 | 0.79 | 0.76 | 0.73 | 0.78 | 0.75 | 0.72 | 0.77 | 0.74 | 0.71 | 0.70 |
| 6 | 0.78 | 0.73 | 0.69 | 0.77 | 0.72 | 0.69 | 0.76 | 0.72 | 0.69 | 0.74 | 0.71 | 0.68 | 0.73 | 0.70 | 0.68 | 0.67 |
| 7 | 0.74 | 0.69 | 0.66 | 0.73 | 0.69 | 0.65 | 0.72 | 0.68 | 0.65 | 0.71 | 0.68 | 0.65 | 0.70 | 0.67 | 0.64 | 0.63 |
| 8 | 0.71 | 0.66 | 0.62 | 0.70 | 0.65 | 0.62 | 0.69 | 0.65 | 0.62 | 0.68 | 0.64 | 0.62 | 0.67 | 0.64 | 0.61 | 0.60 |
| 9 | 0.67 | 0.63 | 0.59 | 0.67 | 0.62 | 0.59 | 0.66 | 0.62 | 0.59 | 0.65 | 0.62 | 0.59 | 0.65 | 0.61 | 0.59 | 0.58 |
| 10 | 0.64 | 0.60 | 0.57 | 0.64 | 0.60 | 0.57 | 0.63 | 0.59 | 0.56 | 0.63 | 0.59 | 0.56 | 0.62 | 0.59 | 0.56 | 0.55 |

## Coefficient Utilization Curve





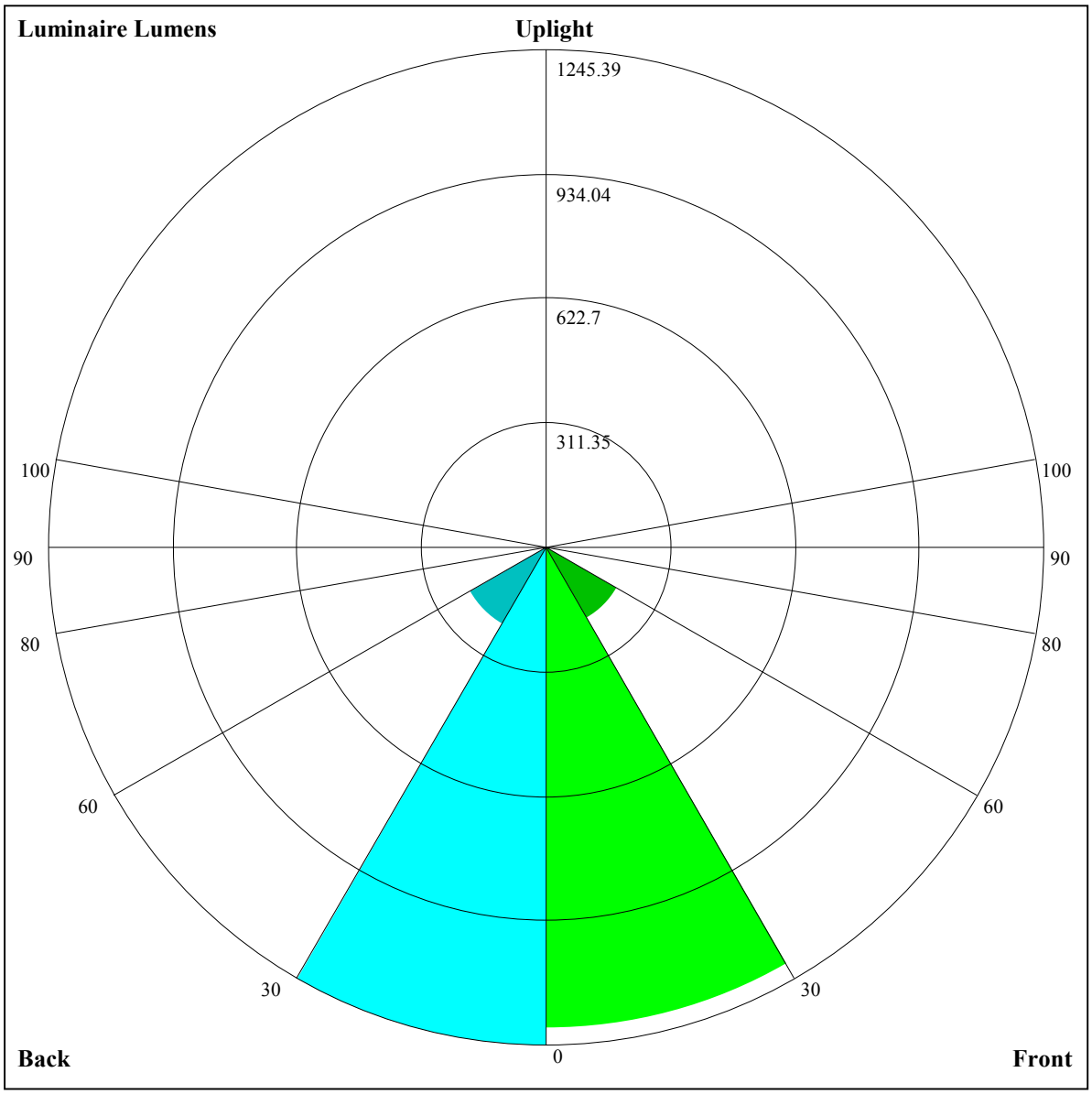

Equipment: GMS 1800
Temperature(°C): 25.0

Date: 2024/8/12
Humidity(%): 60.0%

Operator: NT
Distance(m): 7.25

LCS Graph






Luminaire Lumens:

FL=1205.11,FM=205.96,FH=11.24,FVH=1.64

BL=1245.39,BM=221.81,BH=10.56,BVH=1.52

UL=0,UH=0

BUG Rating:B3-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 | 5834.91 | 5807.58 | 5738.51 | 5695.62 | 5605.90 | 5414.78 | 5318.96 | 5151.81 | 4986.92 |
| 45.0 | 5871.65 | 5847.74 | 5817.09 | 5749.08 | 5666.66 | 5569.68 | 5449.89 | 5297.25 | 5138.98 |
| 90.0 | 5834.33 | 5790.34 | 5720.11 | 5643.22 | 5591.97 | 5449.89 | 5232.60 | 5122.27 | 4950.70 |
| 135.0 | 5896.72 | 5859.40 | 5837.70 | 5756.33 | 5716.22 | 5641.01 | 5525.11 | 5382.51 | 5236.49 |
| 180.0 | 5834.91 | 5855.52 | 5828.24 | 5807.58 | 5750.23 | 5691.15 | 5604.21 | 5498.93 | 5365.79 |
| 225.0 | 5871.65 | 5864.45 | 5837.12 | 5771.94 | 5720.11 | 5605.37 | 5516.22 | 5385.82 | 5219.77 |
| 270.0 | 5834.33 | 5870.55 | 5892.83 | 5872.23 | 5826.55 | 5754.12 | 5674.44 | 5558.54 | 5432.65 |
| 315.0 | 5896.72 | 5887.26 | 5861.09 | 5804.79 | 5716.22 | 5628.18 | 5497.83 | 5353.49 | 5183.03 |
| 360.0 | 5834.91 | 5807.58 | 5738.51 | 5695.62 | 5605.90 | 5414.78 | 5318.96 | 5151.81 | 4986.92 |

| C/γ(°) | 9.0 | 10.0 | 11.0 | 12.0 | 13.0 | 14.0 | 15.0 | 16.0 | 17.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 4799.11 | 4623.08 | 4418.61 | 4222.45 | 4003.53 | 3791.23 | 3575.04 | 3365.58 | 3175.56 |
| 45.0 | 4947.34 | 4758.48 | 4564.00 | 4357.33 | 4152.28 | 3942.77 | 3734.93 | 3611.83 | 3319.32 |
| 90.0 | 4768.47 | 4579.61 | 4384.61 | 4170.68 | 3959.48 | 3753.91 | 3544.97 | 3330.99 | 3140.45 |
| 135.0 | 5069.92 | 4891.05 | 4702.77 | 4497.14 | 4299.35 | 4112.17 | 3922.16 | 3712.65 | 3493.15 |
| 180.0 | 5204.74 | 5033.70 | 4850.94 | 4651.47 | 4447.58 | 4254.78 | 4058.09 | 3865.87 | 3658.61 |
| 225.0 | 5046.53 | 4849.84 | 4652.04 | 4452.04 | 4254.78 | 4046.42 | 3836.90 | 3640.79 | 3438.01 |
| 270.0 | 5281.64 | 5099.98 | 4915.59 | 4740.61 | 4546.76 | 4359.53 | 4161.74 | 3956.69 | 3756.12 |
| 315.0 | 5001.37 | 4825.87 | 4626.97 | 4426.39 | 4228.02 | 4029.13 | 3834.12 | 3635.80 | 3425.71 |
| 360.0 | 4799.11 | 4623.08 | 4418.61 | 4222.45 | 4003.53 | 3791.23 | 3575.04 | 3365.58 | 3175.56 |

| C/γ(°) | 18.0 | 19.0 | 20.0 | 21.0 | 22.0 | 23.0 | 24.0 | 25.0 | 26.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 3003.95 | 2832.33 | 2660.77 | 2484.68 | 2308.07 | 2134.77 | 1998.85 | 1832.80 | 1641.68 |
| 45.0 | 3123.74 | 3003.95 | 2806.15 | 2608.36 | 2411.67 | 2216.67 | 2035.06 | 1865.13 | 1702.97 |
| 90.0 | 2943.24 | 2740.98 | 2537.03 | 2344.29 | 2154.85 | 1975.46 | 1797.16 | 1696.30 | 1531.93 |
| 135.0 | 3275.85 | 3071.91 | 2959.95 | 2683.58 | 2494.14 | 2379.40 | 2184.39 | 2004.42 | 1831.12 |
| 180.0 | 3447.47 | 3319.32 | 3113.17 | 2921.48 | 2727.63 | 2525.89 | 2336.46 | 2154.27 | 1977.66 |
| 225.0 | 3233.49 | 3037.38 | 2839.58 | 2640.69 | 2439.01 | 2247.31 | 2067.91 | 1961.53 | 1732.51 |
| 270.0 | 3591.75 | 3372.25 | 3137.14 | 2991.70 | 2815.09 | 2618.98 | 2440.69 | 2260.71 | 2084.63 |
| 315.0 | 3276.96 | 3051.31 | 2877.48 | 2727.05 | 2544.87 | 2364.31 | 2188.28 | 2014.98 | 1856.77 |
| 360.0 | 3003.95 | 2832.33 | 2660.77 | 2484.68 | 2308.07 | 2134.77 | 1998.85 | 1832.80 | 1641.68 |

| C/γ(°) | 27.0 | 28.0 | 29.0 | 30.0 | 31.0 | 32.0 | 33.0 | 34.0 | 35.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 1512.43 | 1281.79 | 1099.34 | 1033.22 | 871.12 | 720.42 | 592.48 | 486.73 | 399.32 |
| 45.0 | 1546.44 | 1389.86 | 1234.43 | 1079.53 | 922.42 | 772.51 | 635.48 | 520.11 | 428.75 |
| 90.0 | 1095.77 | 1031.28 | 1031.28 | 872.38 | 724.94 | 593.01 | 487.73 | 403.21 | 332.51 |
| 135.0 | 1663.97 | 1496.30 | 1329.67 | 1165.89 | 1003.21 | 842.16 | 692.83 | 563.58 | 462.76 |
| 180.0 | 1812.72 | 1647.26 | 1486.78 | 1322.42 | 1162.00 | 1003.21 | 844.94 | 697.87 | 568.04 |
| 225.0 | 1572.62 | 1478.43 | 1261.13 | 1054.35 | 1024.60 | 868.65 | 716.48 | 584.44 | 480.42 |
| 270.0 | 1915.80 | 1743.66 | 1578.19 | 1420.50 | 1258.35 | 1100.13 | 940.24 | 780.87 | 633.22 |
| 315.0 | 1695.72 | 1529.15 | 1368.15 | 1043.68 | 1043.68 | 874.59 | 781.55 | 595.32 | 530.36 |
| 360.0 | 1512.43 | 1281.79 | 1099.34 | 1033.22 | 871.12 | 720.42 | 592.48 | 486.73 | 399.32 |

| C/γ(°) | 36.0 | 37.0 | 38.0 | 39.0 | 40.0 | 41.0 | 42.0 | 43.0 | 44.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 329.15 | 273.11 | 225.81 | 201.00 | 152.38 | 125.20 | 111.43 | 92.19 | 76.58 |
| 45.0 | 354.11 | 293.93 | 293.93 | 238.00 | 172.25 | 142.60 | 117.69 | 97.24 | 80.00 |
| 90.0 | 275.69 | 228.49 | 188.12 | 154.48 | 137.03 | 103.55 | 84.99 | 75.53 | 58.24 |
| 135.0 | 385.28 | 319.00 | 295.61 | 241.31 | 186.91 | 153.54 | 116.27 | 102.76 | 84.10 |
| 180.0 | 467.18 | 390.33 | 325.10 | 281.10 | 281.10 | 194.43 | 161.58 | 133.77 | 110.85 |
| 225.0 | 399.21 | 333.30 | 278.06 | 231.80 | 200.05 | 159.58 | 136.45 | 112.43 | 89.04 |
| 270.0 | 519.00 | 429.33 | 355.22 | 292.25 | 292.25 | 281.68 | 174.51 | 142.76 | 116.43 |
| 315.0 | 437.74 | 332.41 | 294.98 | 242.42 | 200.00 | 163.73 | 133.93 | 109.65 | 90.09 |
| 360.0 | 329.15 | 273.11 | 225.81 | 201.00 | 152.38 | 125.20 | 111.43 | 92.19 | 76.58 |

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 | 64.65 | 55.56 | 48.67 | 43.47 | 39.11 | 35.43 | 32.43 | 29.75 | 27.49 |
| 45.0 | 66.86 | 56.56 | 49.20 | 43.36 | 38.53 | 34.64 | 31.54 | 29.86 | 26.81 |
| 90.0 | 52.88 | 45.73 | 40.05 | 35.53 | 31.64 | 28.44 | 26.07 | 23.97 | 22.13 |
| 135.0 | 69.38 | 58.03 | 49.57 | 43.31 | 38.21 | 34.06 | 30.64 | 27.70 | 25.34 |
| 180.0 | 91.41 | 75.85 | 64.13 | 54.98 | 48.20 | 43.00 | 38.95 | 35.27 | 32.01 |
| 225.0 | 76.48 | 64.23 | 54.93 | 47.73 | 42.10 | 37.53 | 33.59 | 30.33 | 27.86 |
| 270.0 | 94.72 | 77.69 | 64.55 | 54.45 | 46.73 | 40.74 | 35.90 | 32.17 | 29.01 |
| 315.0 | 74.69 | 63.02 | 54.09 | 47.31 | 41.94 | 37.79 | 34.22 | 31.27 | 28.80 |
| 360.0 | 64.65 | 55.56 | 48.67 | 43.47 | 39.11 | 35.43 | 32.43 | 29.75 | 27.49 |

| C/γ(°) | 54.0 | 55.0 | 56.0 | 57.0 | 58.0 | 59.0 | 60.0 | 61.0 | 62.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 25.60 | 24.13 | 22.76 | 21.55 | 20.60 | 19.66 | 18.82 | 18.03 | 17.40 |
| 45.0 | 25.12 | 23.86 | 21.87 | 21.03 | 19.87 | 18.82 | 18.19 | 17.66 | 17.24 |
| 90.0 | 20.45 | 19.13 | 17.87 | 16.82 | 16.03 | 15.45 | 14.93 | 14.30 | 13.67 |
| 135.0 | 23.39 | 21.71 | 20.55 | 19.45 | 18.40 | 17.82 | 16.77 | 16.29 | 15.87 |
| 180.0 | 29.33 | 27.17 | 25.39 | 24.44 | 23.07 | 21.18 | 20.34 | 19.13 | 18.08 |
| 225.0 | 25.65 | 23.71 | 21.97 | 20.39 | 18.92 | 17.66 | 16.61 | 15.98 | 14.98 |
| 270.0 | 26.49 | 24.49 | 22.71 | 21.39 | 19.50 | 18.40 | 17.19 | 16.19 | 15.30 |
| 315.0 | 26.65 | 24.81 | 23.60 | 22.29 | 20.66 | 19.71 | 18.71 | 17.82 | 17.03 |
| 360.0 | 25.60 | 24.13 | 22.76 | 21.55 | 20.60 | 19.66 | 18.82 | 18.03 | 17.40 |

| C/γ(°) | 63.0 | 64.0 | 65.0 | 66.0 | 67.0 | 68.0 | 69.0 | 70.0 | 71.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 16.87 | 16.24 | 15.61 | 14.93 | 14.19 | 13.40 | 12.67 | 11.83 | 10.83 |
| 45.0 | 16.66 | 16.29 | 16.19 | 15.82 | 15.51 | 14.98 | 13.98 | 13.25 | 12.56 |
| 90.0 | 13.30 | 12.98 | 12.40 | 12.19 | 11.83 | 11.46 | 11.20 | 10.78 | 10.41 |
| 135.0 | 14.82 | 14.56 | 13.93 | 13.30 | 12.62 | 11.72 | 10.99 | 10.35 | 9.78 |
| 180.0 | 17.08 | 16.08 | 15.09 | 14.03 | 13.14 | 12.35 | 11.46 | 10.57 | 9.72 |
| 225.0 | 14.14 | 13.61 | 12.56 | 12.09 | 11.41 | 10.62 | 9.88 | 9.36 | 8.83 |
| 270.0 | 14.56 | 14.03 | 13.25 | 12.56 | 11.98 | 11.35 | 10.67 | 10.09 | 9.57 |
| 315.0 | 16.19 | 15.30 | 14.40 | 13.77 | 13.09 | 12.25 | 11.51 | 10.83 | 10.25 |
| 360.0 | 16.87 | 16.24 | 15.61 | 14.93 | 14.19 | 13.40 | 12.67 | 11.83 | 10.83 |

| C/γ(°) | 72.0 | 73.0 | 74.0 | 75.0 | 76.0 | 77.0 | 78.0 | 79.0 | 80.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 9.93 | 8.99 | 8.25 | 7.41 | 6.78 | 6.36 | 5.83 | 5.26 | 4.84 |
| 45.0 | 11.25 | 10.04 | 8.30 | 7.52 | 7.04 | 6.25 | 5.99 | 5.52 | 4.94 |
| 90.0 | 9.36 | 8.52 | 7.41 | 6.52 | 5.94 | 5.57 | 4.99 | 4.52 | 4.05 |
| 135.0 | 9.25 | 8.67 | 8.20 | 7.73 | 7.10 | 6.57 | 6.10 | 5.73 | 5.15 |
| 180.0 | 8.99 | 8.41 | 7.83 | 7.46 | 6.99 | 6.25 | 5.89 | 5.47 | 4.94 |
| 225.0 | 8.30 | 7.73 | 7.31 | 6.83 | 6.36 | 5.83 | 5.31 | 4.94 | 4.52 |
| 270.0 | 9.04 | 8.52 | 7.99 | 7.57 | 7.10 | 6.57 | 6.25 | 5.62 | 5.15 |
| 315.0 | 9.62 | 9.15 | 8.62 | 8.09 | 7.46 | 6.89 | 6.62 | 5.94 | 5.62 |
| 360.0 | 9.93 | 8.99 | 8.25 | 7.41 | 6.78 | 6.36 | 5.83 | 5.26 | 4.84 |

| C/γ(°) | 81.0 | 82.0 | 83.0 | 84.0 | 85.0 | 86.0 | 87.0 | 88.0 | 89.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 4.47 | 3.99 | 3.63 | 3.10 | 2.79 | 2.63 | 2.31 | 2.05 | 1.89 |
| 45.0 | 4.52 | 3.89 | 3.63 | 3.05 | 2.84 | 2.42 | 2.16 | 2.00 | 1.79 |
| 90.0 | 3.68 | 3.31 | 2.94 | 2.52 | 2.31 | 2.10 | 1.94 | 1.73 | 1.79 |
| 135.0 | 4.52 | 4.05 | 3.73 | 3.21 | 2.79 | 2.47 | 2.16 | 1.79 | 1.42 |
| 180.0 | 4.52 | 3.94 | 3.42 | 3.10 | 2.68 | 2.26 | 2.00 | 1.68 | 1.42 |
| 225.0 | 3.94 | 3.63 | 3.15 | 2.79 | 2.37 | 2.05 | 1.89 | 1.58 | 1.26 |
| 270.0 | 4.94 | 4.21 | 3.84 | 3.36 | 2.89 | 2.52 | 2.16 | 1.89 | 1.68 |
| 315.0 | 4.89 | 4.52 | 4.05 | 3.68 | 3.21 | 2.84 | 2.52 | 2.31 | 2.05 |
| 360.0 | 4.47 | 3.99 | 3.63 | 3.10 | 2.79 | 2.63 | 2.31 | 2.05 | 1.89 |

Intensity data(cd)



| C/γ(°) | 90.0 |
|---|---|
| 0.0 | 1.84 |
| 45.0 | 1.79 |
| 90.0 | 1.79 |
| 135.0 | 1.37 |
| 180.0 | 1.10 |
| 225.0 | 1.16 |
| 270.0 | 1.42 |
| 315.0 | 1.84 |
| 360.0 | 1.84 |