NATA LIGHTNG CO.,LTD.
www.nata.cn
Email:info@nata.con
Tel:+86-750-3770000 Fax:+86-750-3771111
Address:380JinOu Road,GaoXin Zone,Jiang Men City,Guangdong,Ching

## Nata

LumCAT: 1-1211-L
Luminaire:
Report No: 220923-B014
Test No: 220923-C014
LampCAT: CITIZEN CLU028
Lamp flux(lm): 1199.6
Number of Lamps: 1
Length(mm): 43
Phm Type: C

Voltage(V): 35.5600
Current(A): 0.2820
Power (W): 10.0270
PF: 0.0000
Ballast type: DC
Width(mm): 43
Height(mm): 0

## Photometric Results

Lumens(lm): 1011.69
Efficiency(%): 84.34%
Lumens(lm)/Power(W): 100.90
Central intensity(cd): 3878.561
Maximum intensity(cd): 3878.561
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=24.0
[C90/270]Total=24.0
Field angle(10%Imax): [C0/180]Total=54.3
[C90/270]Total=54.3
Maximum s/h(1/2): C0_180=0.40 C90_270=0.40
Maximum s/h(1/4): C0_180=0.43 C90_270=0.43
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 84.34%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.981%

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 0.0 | 3878.561 | 0.000 | 0 | .000% | .000% |
| 1.0 | 3863.921 | 3.705 | 3.705 | .309% | .366% |
| 2.0 | 3810.592 | 11.015 | 14.72 | .918% | 1.455% |
| 3.0 | 3710.506 | 17.988 | 32.708 | 1.500% | 3.233% |
| 4.0 | 3585.846 | 24.423 | 57.131 | 2.036% | 5.647% |
| 5.0 | 3431.086 | 30.186 | 87.318 | 2.516% | 8.631% |
| 6.0 | 3241.147 | 35.064 | 122.382 | 2.923% | 12.097% |
| 7.0 | 3031.563 | 38.935 | 161.316 | 3.246% | 15.945% |
| 8.0 | 2827.657 | 41.933 | 203.25 | 3.496% | 20.090% |
| 9.0 | 2601.641 | 44.002 | 247.251 | 3.668% | 24.439% |
| 10.0 | 2361.285 | 44.913 | 292.164 | 3.744% | 28.879% |
| 11.0 | 2148.938 | 45.066 | 337.23 | 3.757% | 33.333% |
| 12.0 | 1939.878 | 44.697 | 381.927 | 3.726% | 37.751% |
| 13.0 | 1722.676 | 43.465 | 425.392 | 3.623% | 42.048% |
| 14.0 | 1534.454 | 41.691 | 467.083 | 3.475% | 46.169% |
| 15.0 | 1367.699 | 39.842 | 506.925 | 3.321% | 50.107% |
| 16.0 | 1230.312 | 38.068 | 544.993 | 3.173% | 53.870% |
| 17.0 | 1091.581 | 36.158 | 581.152 | 3.014% | 57.444% |
| 18.0 | 983.854 | 34.219 | 615.371 | 2.853% | 60.826% |
| 19.0 | 889.392 | 32.591 | 647.962 | 2.717% | 64.048% |
| 20.0 | 803.811 | 30.990 | 678.952 | 2.583% | 67.111% |
| 21.0 | 731.136 | 29.474 | 708.426 | 2.457% | 70.024% |
| 22.0 | 672.183 | 28.200 | 736.626 | 2.351% | 72.812% |
| 23.0 | 617.845 | 27.068 | 763.695 | 2.256% | 75.487% |
| 24.0 | 560.878 | 25.771 | 789.466 | 2.148% | 78.034% |
| 25.0 | 505.943 | 24.257 | 813.723 | 2.022% | 80.432% |
| 26.0 | 452.367 | 22.621 | 836.344 | 1.886% | 82.668% |
| 27.0 | 396.909 | 20.778 | 857.122 | 1.732% | 84.722% |
| 28.0 | 341.294 | 18.690 | 875.811 | 1.558% | 86.569% |
| 29.0 | 285.410 | 16.396 | 892.208 | 1.367% | 88.190% |
| 30.0 | 239.960 | 14.185 | 906.393 | 1.182% | 89.592% |
| 31.0 | 195.250 | 12.111 | 918.504 | 1.010% | 90.789% |
| 32.0 | 149.031 | 9.863 | 928.367 | .822% | 91.764% |
| 33.0 | 117.526 | 7.853 | 936.22 | .655% | 92.540% |
| 34.0 | 91.810 | 6.335 | 942.555 | .528% | 93.166% |
| 35.0 | 73.205 | 5.125 | 947.68 | .427% | 93.673% |
| 36.0 | 60.724 | 4.264 | 951.944 | .355% | 94.095% |
| 37.0 | 52.142 | 3.681 | 955.625 | .307% | 94.458% |

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 38.0 | 45.121 | 3.247 | 958.872 | .271% | 94.779% |
| 39.0 | 39.415 | 2.885 | 961.757 | .241% | 95.064% |
| 40.0 | 34.836 | 2.590 | 964.347 | .216% | 95.320% |
| 41.0 | 31.154 | 2.350 | 966.697 | .196% | 95.553% |
| 42.0 | 27.949 | 2.147 | 968.844 | .179% | 95.765% |
| 43.0 | 25.126 | 1.966 | 970.81 | .164% | 95.959% |
| 44.0 | 22.781 | 1.808 | 972.618 | .151% | 96.138% |
| 45.0 | 20.734 | 1.672 | 974.29 | .139% | 96.303% |
| 46.0 | 18.874 | 1.549 | 975.839 | .129% | 96.456% |
| 47.0 | 17.328 | 1.440 | 977.279 | .120% | 96.599% |
| 48.0 | 16.088 | 1.351 | 978.63 | .113% | 96.732% |
| 49.0 | 14.961 | 1.275 | 979.905 | .106% | 96.858% |
| 50.0 | 13.945 | 1.205 | 981.11 | .100% | 96.977% |
| 51.0 | 13.183 | 1.148 | 982.258 | .096% | 97.091% |
| 52.0 | 12.503 | 1.102 | 983.36 | .092% | 97.200% |
| 53.0 | 11.921 | 1.062 | 984.423 | .089% | 97.305% |
| 54.0 | 11.428 | 1.029 | 985.452 | .086% | 97.407% |
| 55.0 | 11.062 | 1.004 | 986.456 | .084% | 97.506% |
| 56.0 | 10.756 | 0.986 | 987.442 | .082% | 97.603% |
| 57.0 | 10.472 | 0.971 | 988.412 | .081% | 97.699% |
| 58.0 | 10.263 | 0.959 | 989.371 | .080% | 97.794% |
| 59.0 | 10.068 | 0.950 | 990.322 | .079% | 97.888% |
| 60.0 | 9.852 | 0.941 | 991.263 | .078% | 97.981% |
| 61.0 | 9.665 | 0.931 | 992.194 | .078% | 98.073% |
| 62.0 | 9.456 | 0.921 | 993.115 | .077% | 98.164% |
| 63.0 | 9.209 | 0.908 | 994.023 | .076% | 98.254% |
| 64.0 | 8.941 | 0.891 | 994.914 | .074% | 98.342% |
| 65.0 | 8.589 | 0.868 | 995.781 | .072% | 98.428% |
| 66.0 | 8.298 | 0.843 | 996.624 | .070% | 98.511% |
| 67.0 | 7.977 | 0.818 | 997.442 | .068% | 98.592% |
| 68.0 | 7.656 | 0.792 | 998.234 | .066% | 98.670% |
| 69.0 | 7.387 | 0.767 | 999.002 | .064% | 98.746% |
| 70.0 | 7.126 | 0.745 | 999.747 | .062% | 98.820% |
| 71.0 | 6.887 | 0.724 | 1000.471 | .060% | 98.891% |
| 72.0 | 6.692 | 0.706 | 1001.177 | .059% | 98.961% |
| 73.0 | 6.498 | 0.690 | 1001.867 | .058% | 99.029% |
| 74.0 | 6.311 | 0.673 | 1002.54 | .056% | 99.096% |
| 75.0 | 6.125 | 0.657 | 1003.198 | .055% | 99.161% |

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 76.0 | 5.983 | 0.643 | 1003.84 | .054% | 99.224% |
| 77.0 | 5.833 | 0.630 | 1004.47 | .053% | 99.286% |
| 78.0 | 5.706 | 0.618 | 1005.088 | .051% | 99.348% |
| 79.0 | 5.572 | 0.606 | 1005.694 | .051% | 99.407% |
| 80.0 | 5.452 | 0.594 | 1006.288 | .050% | 99.466% |
| 81.0 | 5.340 | 0.584 | 1006.872 | .049% | 99.524% |
| 82.0 | 5.236 | 0.574 | 1007.445 | .048% | 99.581% |
| 83.0 | 5.139 | 0.564 | 1008.009 | .047% | 99.636% |
| 84.0 | 5.034 | 0.554 | 1008.564 | .046% | 99.691% |
| 85.0 | 4.930 | 0.544 | 1009.107 | .045% | 99.745% |
| 86.0 | 4.803 | 0.532 | 1009.639 | .044% | 99.797% |
| 87.0 | 4.758 | 0.523 | 1010.163 | .044% | 99.849% |
| 88.0 | 4.631 | 0.514 | 1010.677 | .043% | 99.900% |
| 89.0 | 4.616 | 0.507 | 1011.184 | .042% | 99.950% |
| 90.0 | 4.601 | 0.505 | 1011.689 | .042% | 100.000% |

## Zonal flux distribution table



ZONAL LUMEN SUMMARY

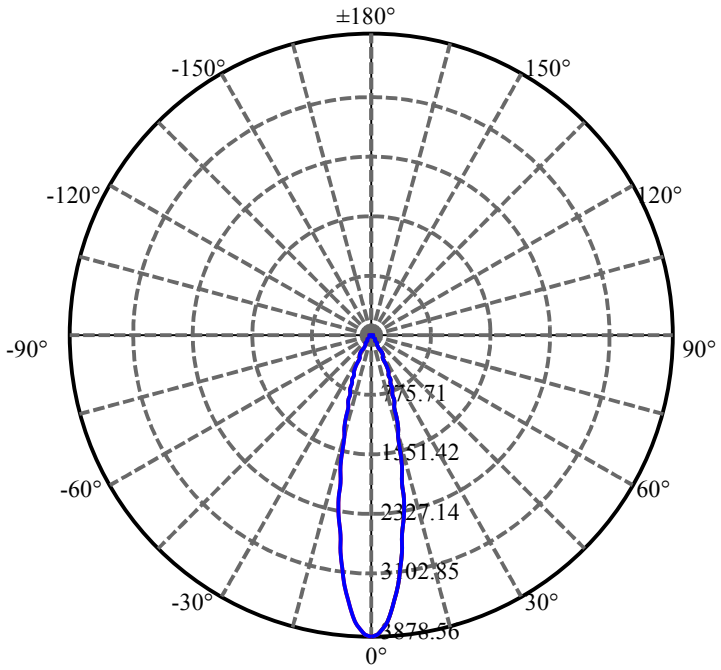
| Zone | Lumens | %Lamp | %Fixt |
|---|---|---|---|
| 0-30 | 906.39 | 75.56% | 89.59% |
| 0-40 | 964.35 | 80.39% | 95.32% |
| 0-60 | 991.26 | 82.63% | 97.98% |
| 0-90 | 1011.18 | 84.29% | 99.95% |
| 0-120 | 1011.18 | 84.29% | 99.95% |
| 0-180 | 1011.69 | 84.34% | 100.00% |
| 60-90 | 20.86 | 1.74% | 2.06% |
| 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% |
| 0-24.82 | 809.35 | 67.47% | 80.00% |

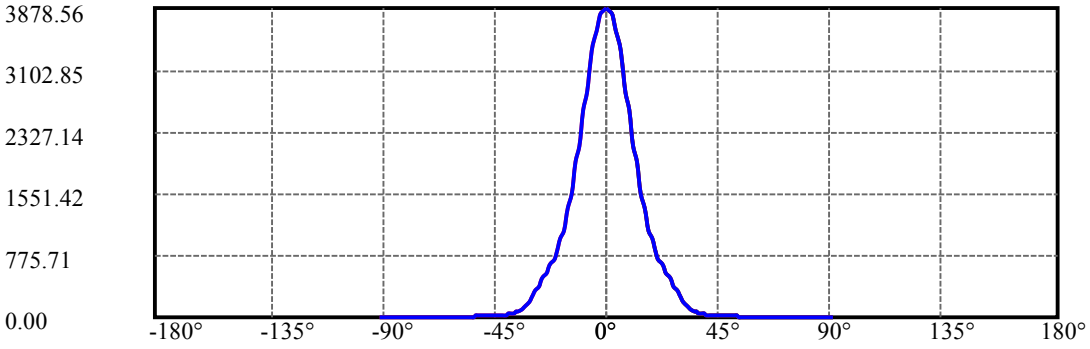
ZONAL LUMEN SUMMARY

| | |
|---|---|
| 0-10 | 292.16 |
| 10-20 | 386.79 |
| 20-30 | 227.44 |
| 30-40 | 57.95 |
| 40-50 | 16.76 |
| 50-60 | 10.15 |
| 60-70 | 8.48 |
| 70-80 | 6.54 |
| 80-90 | 4.90 |
| 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:

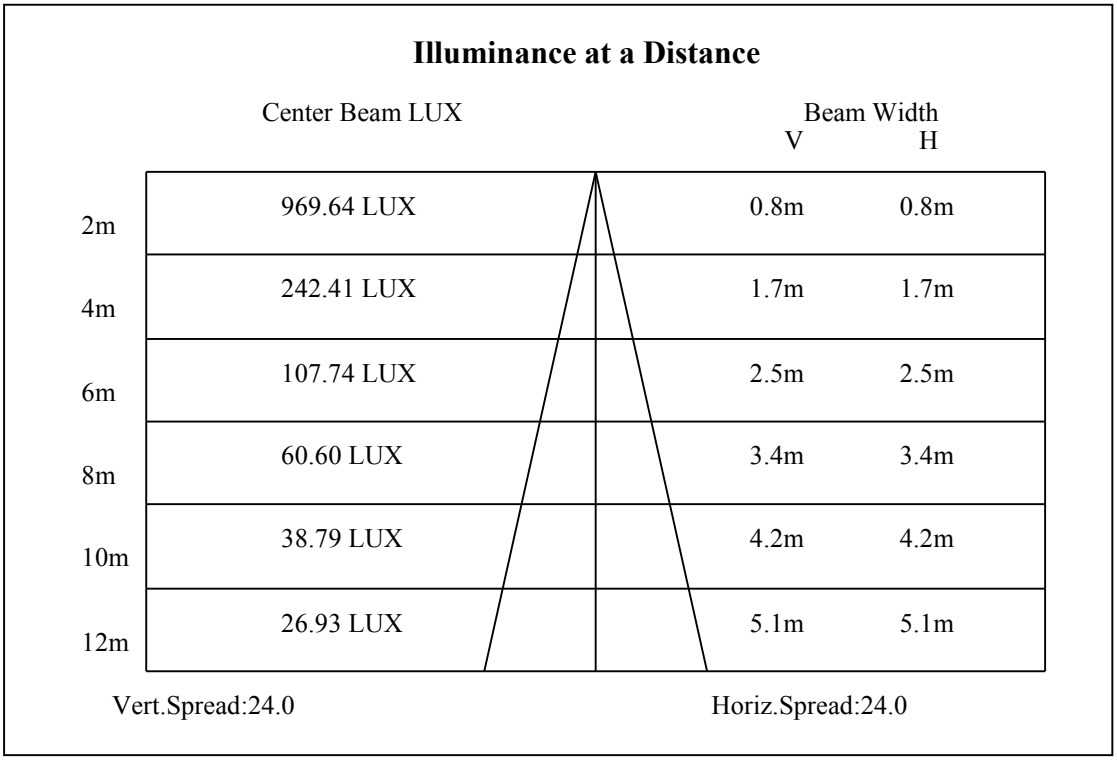
C90/C270:

Field angle(10%Imax):C0/180Left:27.2 Right:27.2
:C90/270Left:27.2 Right:27.2

Beam Angle(50%Imax):C0/180Left:12.0 Right:12.0
:C90/270Left:12.0 Right:12.0

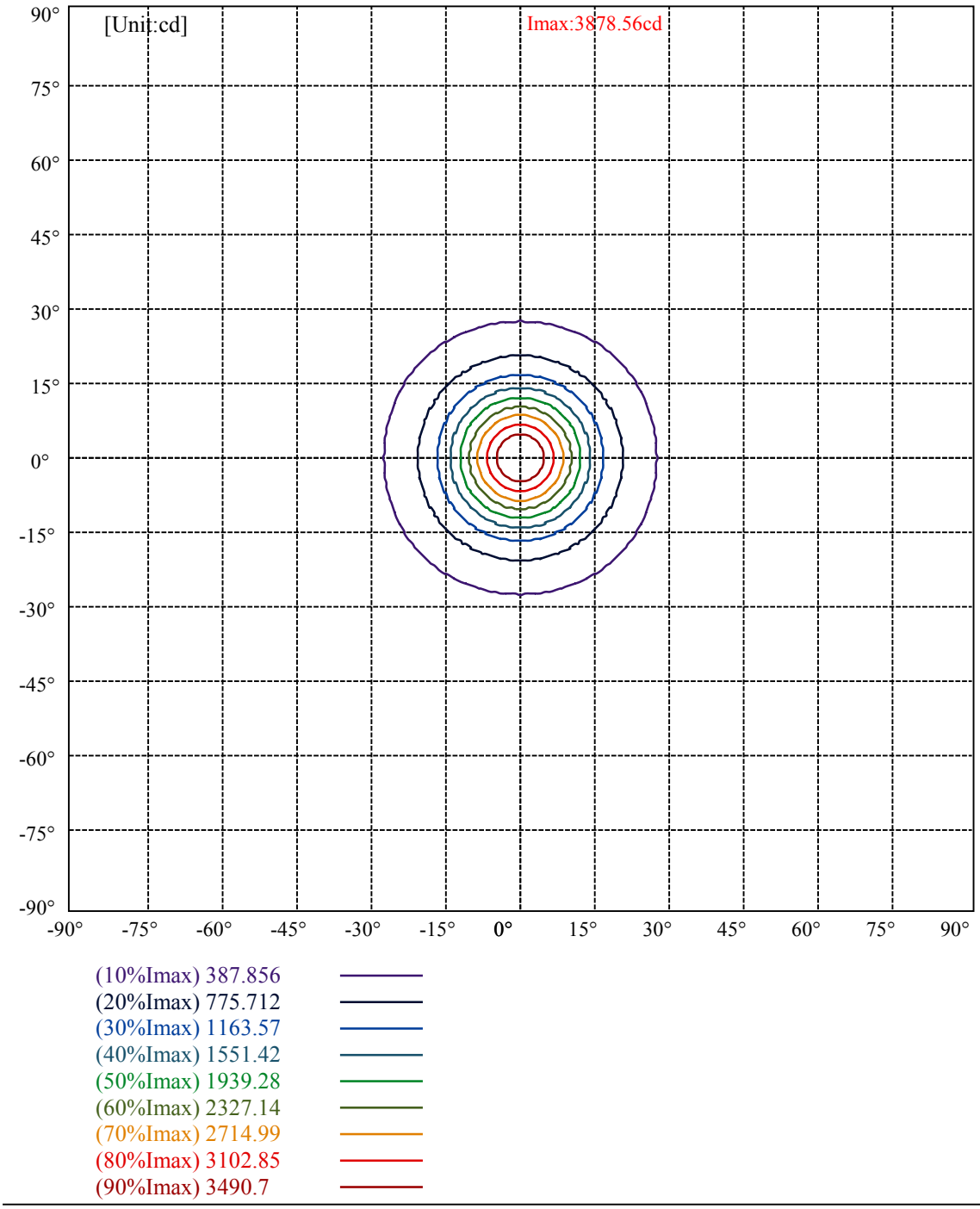
Lux distance Curve





ISO-Intensity(V-H)






(10%Imax) 387.856
(20%Imax) 775.712
(30%Imax) 1163.57
(40%Imax) 1551.42
(50%Imax) 1939.28
(60%Imax) 2327.14
(70%Imax) 2714.99
(80%Imax) 3102.85
(90%Imax) 3490.7

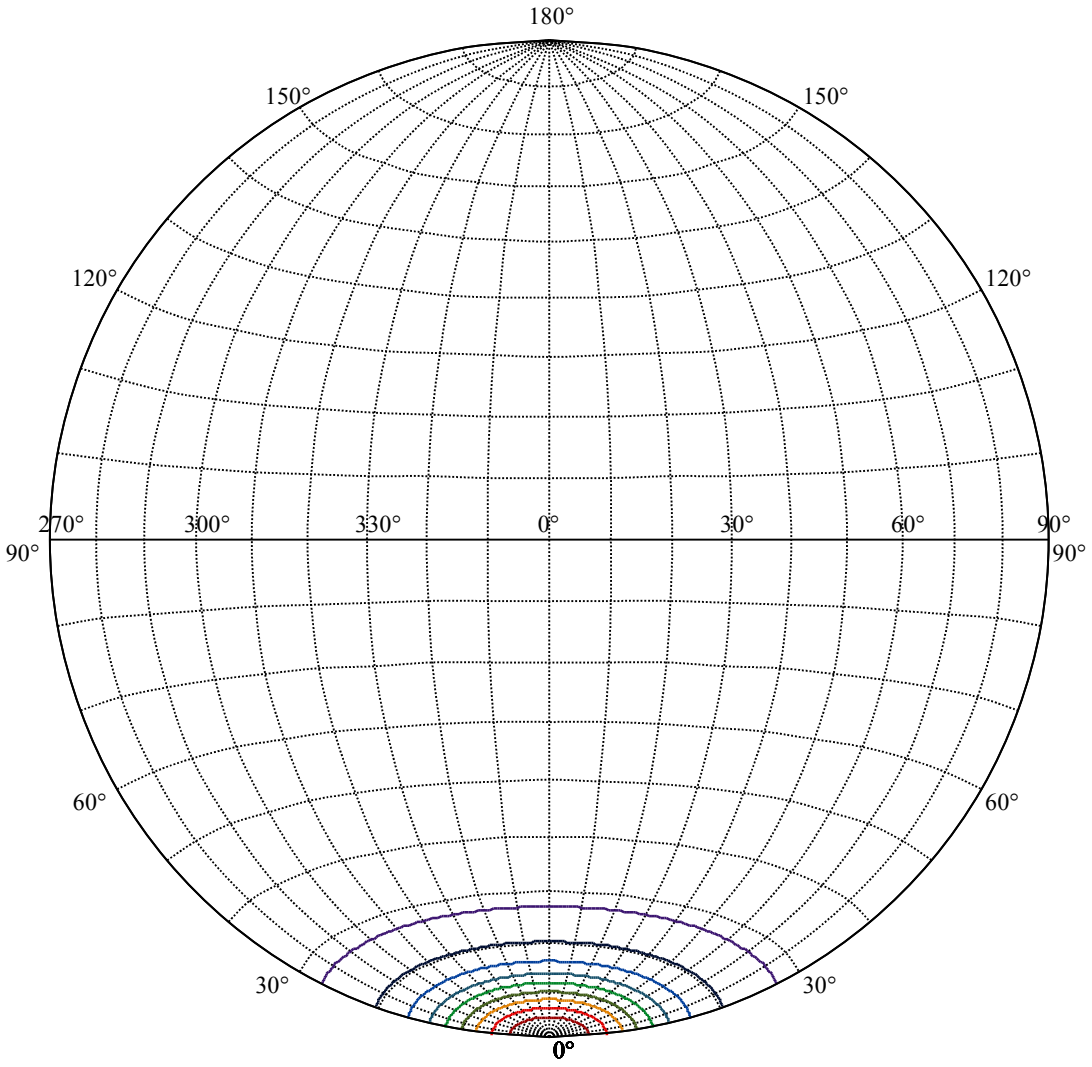
Equipment: GMS1980
Temperature(°C): 25.0

Date: 2022/9/23
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.73

ISO candela diagram on circular web






House [Unit:cd] Road

Imax:3878.56

(10%Imax) 387.856
(20%Imax) 775.712
(30%Imax) 1163.57
(40%Imax) 1551.42
(50%Imax) 1939.28
(60%Imax) 2327.14
(70%Imax) 2714.99
(80%Imax) 3102.85
(90%Imax) 3490.7

Equipment: GMS1980
Temperature(°C): 25.0

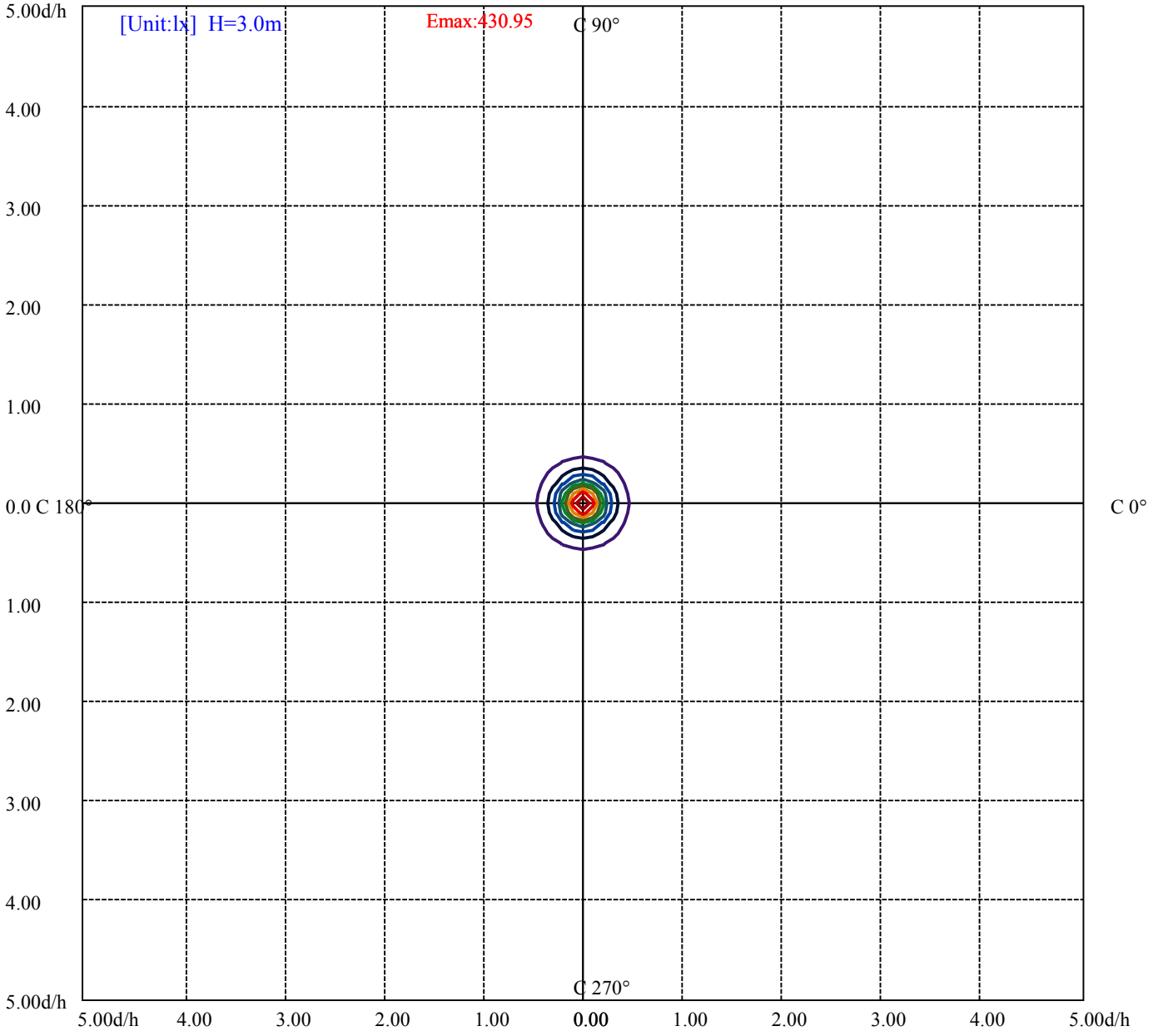
Date: 2022/9/23
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.73

Nata 1-1211-L

ISO illuminance diagram





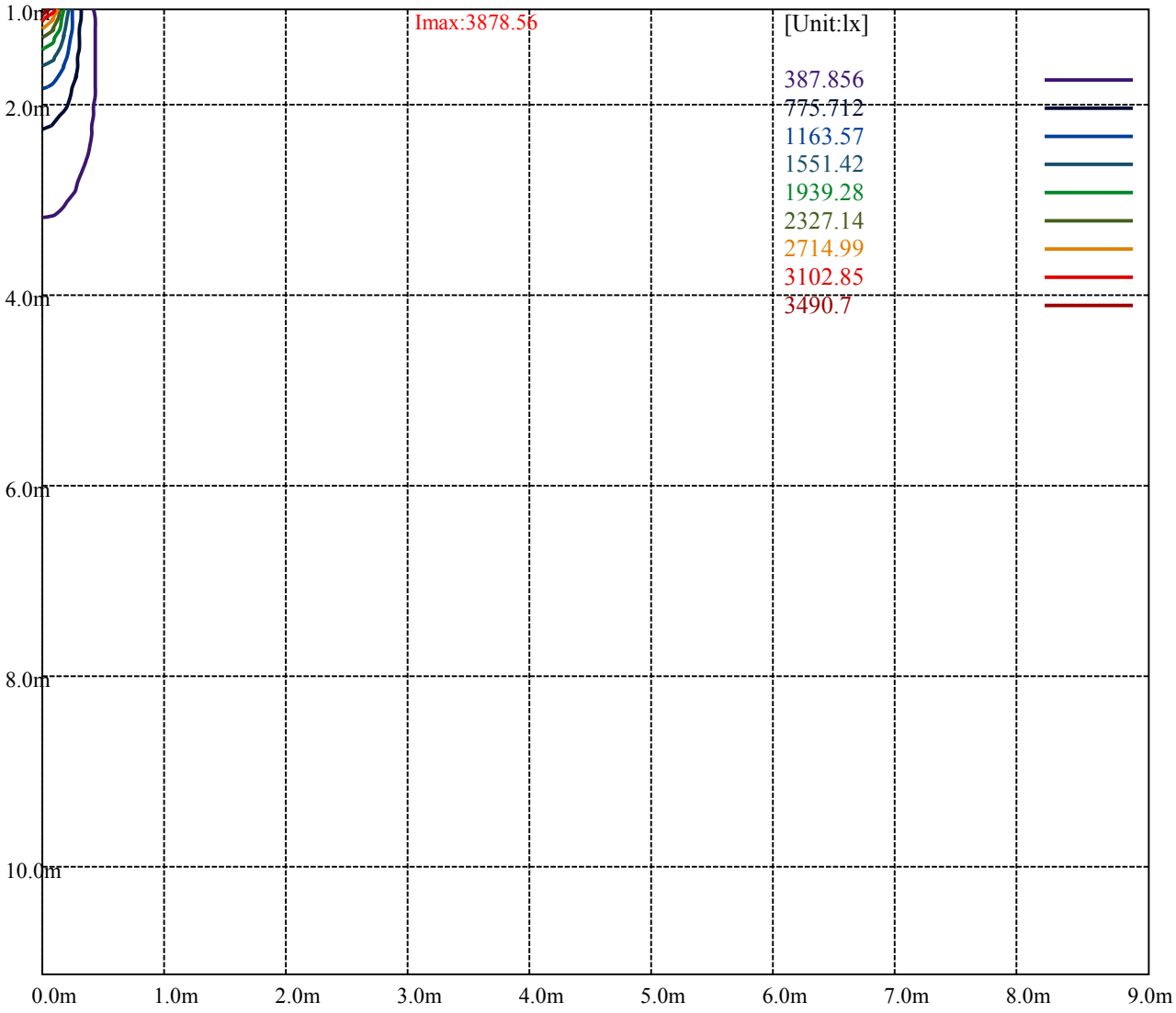

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2022/9/23
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.73

Space ISO Lux diagram






Equipment: GMS1980
Temperature(°C): 25.0

Date: 2022/9/23
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.73

Nata 1-1211-L

## Luminance Limitting Curve(no luminous side)



Luminance Table

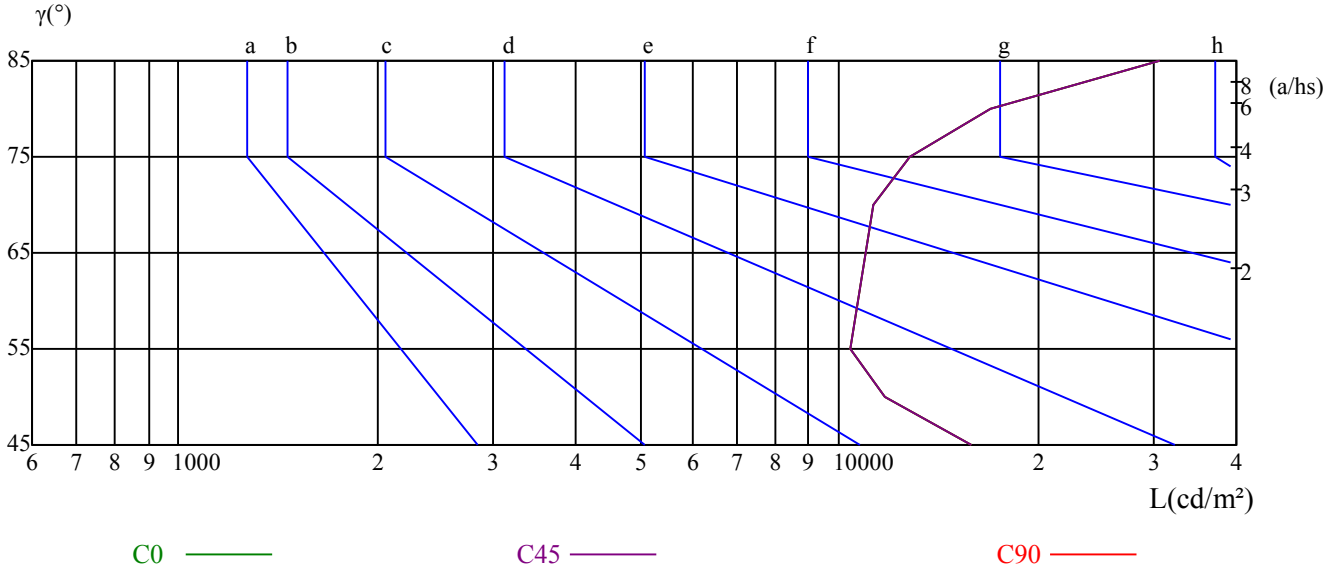
| γ | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 |
|---|---|---|---|---|---|---|---|---|---|
| C0 | 15859 | 11733 | 10430 | 10656 | 10992 | 11268 | 12798 | 16982 | 30590 |
| C45 | 15859 | 11733 | 10430 | 10656 | 10992 | 11268 | 12798 | 16982 | 30590 |
| C90 | 15859 | 11733 | 10430 | 10656 | 10992 | 11268 | 12798 | 16982 | 30590 |

| L(Hor)(65) | L(Ver)(65) | L45(65) | L(Hor)(75) | L(Ver)(75) | L45(75) | L(Hor)(85) | L(Ver)(85) | L45(85) |
|---|---|---|---|---|---|---|---|---|
| 10992 | 10992 | 10992 | 12798 | 12798 | 12798 | 30590 | 30590 | 30590 |

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



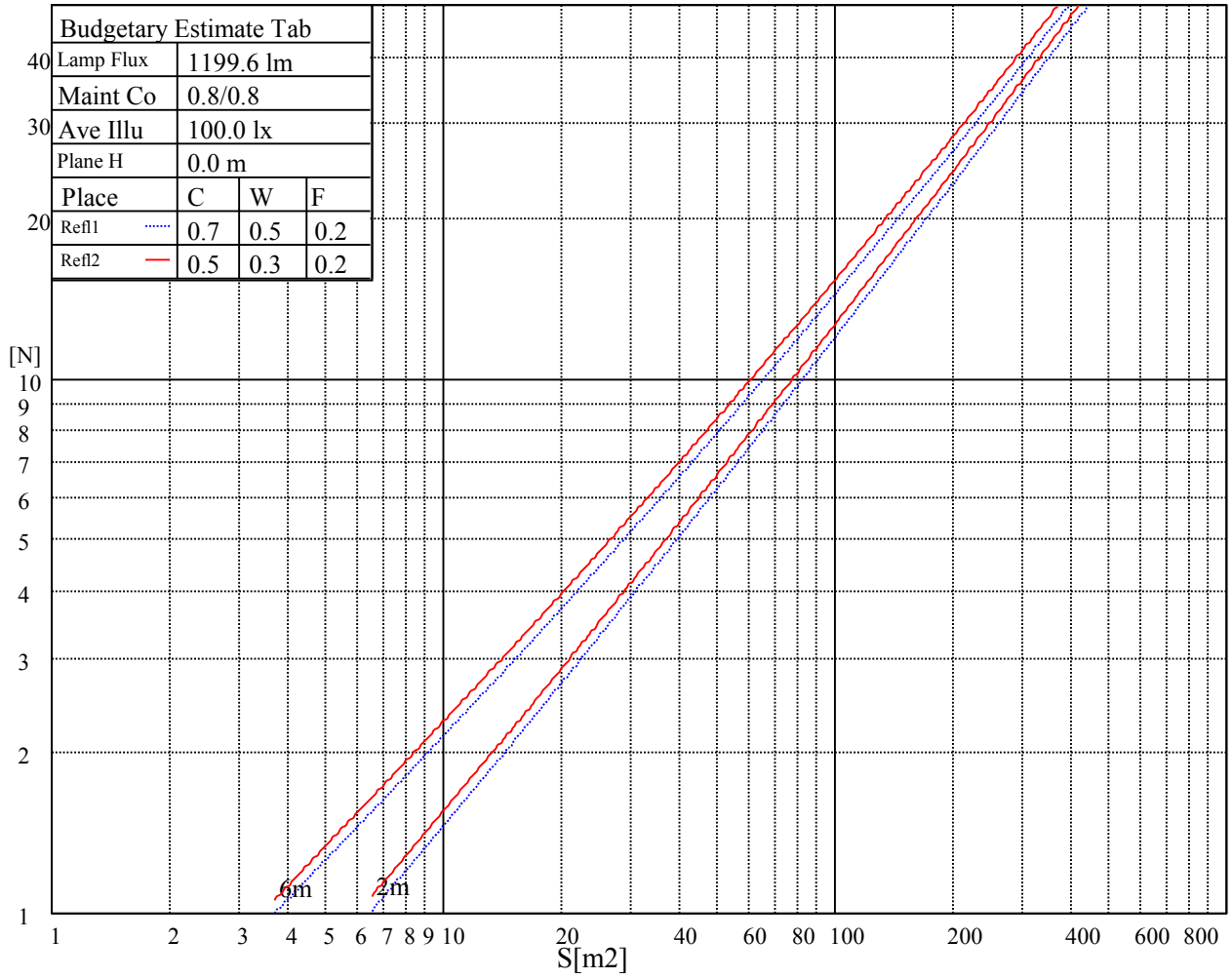

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2022/9/23
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.73

## Budgetary Estimate Table






Equipment: GMS1980 Date: 2022/9/23 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.73

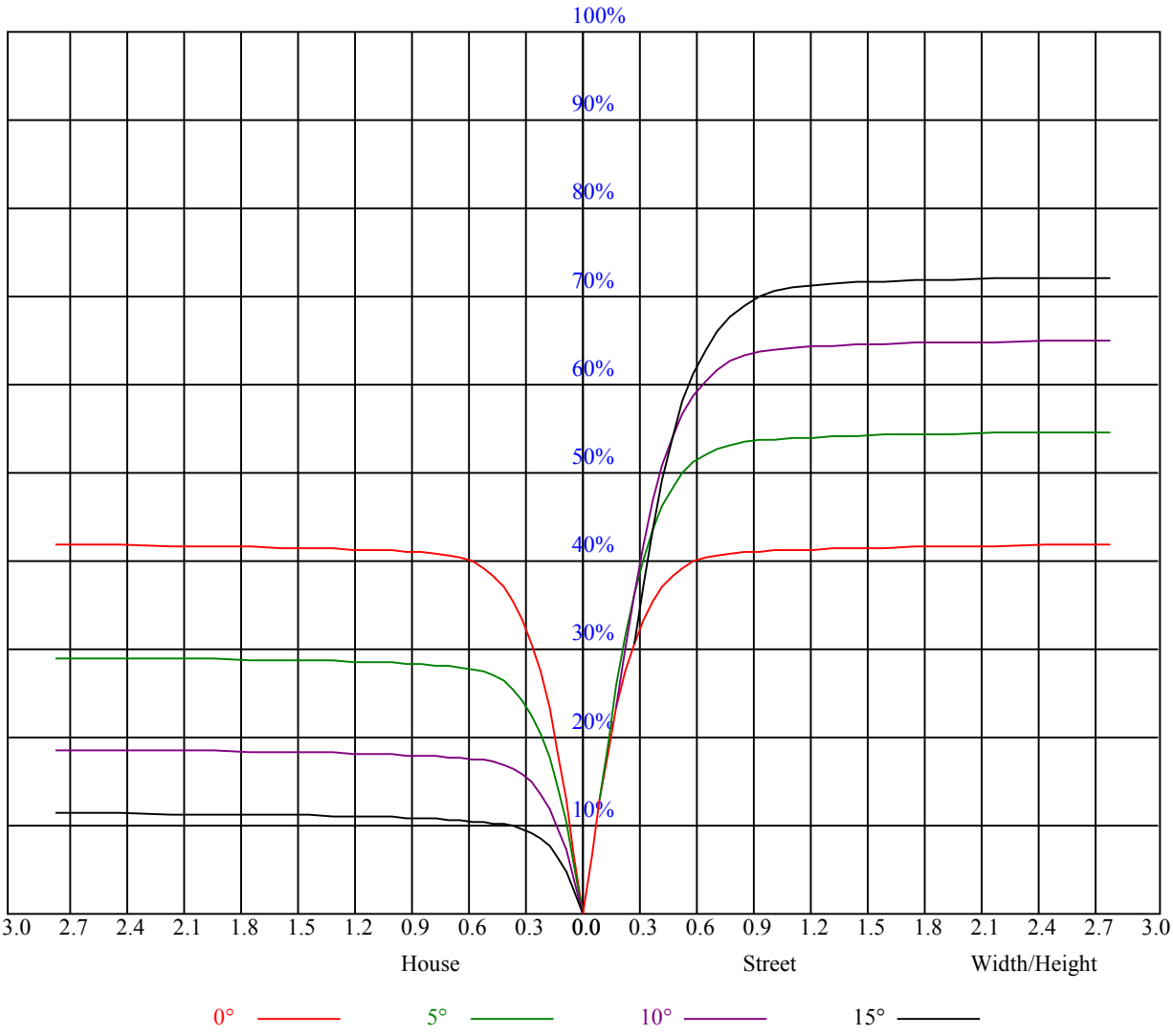
Utilization factor table for indoor luminaire



| 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 | 1.00 | 1.00 | 1.00 | 0.98 | 0.98 | 0.98 | 0.94 | 0.94 | 0.94 | 0.90 | 0.90 | 0.90 | 0.86 | 0.86 | 0.86 | 0.84 |
| 1 | 0.94 | 0.92 | 0.91 | 0.92 | 0.91 | 0.89 | 0.89 | 0.88 | 0.87 | 0.86 | 0.85 | 0.84 | 0.83 | 0.82 | 0.82 | 0.80 |
| 2 | 0.89 | 0.86 | 0.84 | 0.88 | 0.85 | 0.83 | 0.85 | 0.83 | 0.81 | 0.83 | 0.81 | 0.79 | 0.80 | 0.79 | 0.78 | 0.76 |
| 3 | 0.85 | 0.81 | 0.78 | 0.84 | 0.80 | 0.78 | 0.81 | 0.79 | 0.77 | 0.79 | 0.77 | 0.75 | 0.78 | 0.76 | 0.74 | 0.73 |
| 4 | 0.81 | 0.77 | 0.74 | 0.80 | 0.76 | 0.74 | 0.78 | 0.75 | 0.73 | 0.76 | 0.74 | 0.72 | 0.75 | 0.73 | 0.71 | 0.70 |
| 5 | 0.77 | 0.73 | 0.70 | 0.76 | 0.73 | 0.70 | 0.75 | 0.72 | 0.69 | 0.74 | 0.71 | 0.69 | 0.73 | 0.70 | 0.68 | 0.67 |
| 6 | 0.74 | 0.70 | 0.67 | 0.73 | 0.70 | 0.67 | 0.72 | 0.69 | 0.67 | 0.71 | 0.68 | 0.66 | 0.70 | 0.68 | 0.66 | 0.65 |
| 7 | 0.71 | 0.67 | 0.64 | 0.71 | 0.67 | 0.64 | 0.70 | 0.66 | 0.64 | 0.69 | 0.66 | 0.64 | 0.68 | 0.65 | 0.63 | 0.62 |
| 8 | 0.69 | 0.65 | 0.62 | 0.68 | 0.64 | 0.62 | 0.67 | 0.64 | 0.62 | 0.67 | 0.64 | 0.61 | 0.66 | 0.63 | 0.61 | 0.60 |
| 9 | 0.66 | 0.62 | 0.60 | 0.66 | 0.62 | 0.60 | 0.65 | 0.62 | 0.59 | 0.64 | 0.61 | 0.59 | 0.64 | 0.61 | 0.59 | 0.58 |
| 10 | 0.64 | 0.60 | 0.58 | 0.64 | 0.60 | 0.58 | 0.63 | 0.60 | 0.57 | 0.63 | 0.59 | 0.57 | 0.62 | 0.59 | 0.57 | 0.56 |

## Coefficient Utilization Curve






| | | |
|---|---|---|
| Equipment: GMS1980 | Date: 2022/9/23 | Operator: NT07 |
| Temperature(°C): 25.0 | Humidity(%): 65.0% | Distance(m): 7.73 |

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 | 3852.27 | 3902.46 | 3906.05 | 3876.77 | 3799.09 | 3683.77 | 3573.22 | 3374.84 | 3191.40 |
| 45.0 | 3894.69 | 3885.13 | 3852.27 | 3755.47 | 3648.51 | 3507.50 | 3291.79 | 3102.97 | 2902.80 |
| 90.0 | 3874.98 | 3827.17 | 3733.96 | 3601.31 | 3447.14 | 3244.58 | 3026.48 | 2828.10 | 2584.91 |
| 135.0 | 3892.30 | 3837.33 | 3738.14 | 3610.27 | 3436.39 | 3254.14 | 3037.84 | 2806.59 | 2598.06 |
| 180.0 | 3852.27 | 3787.74 | 3684.36 | 3490.17 | 3340.78 | 3144.20 | 2914.75 | 2675.14 | 2460.03 |
| 225.0 | 3894.69 | 3863.62 | 3800.88 | 3705.28 | 3544.54 | 3397.55 | 3212.91 | 2944.03 | 2764.17 |
| 270.0 | 3874.98 | 3898.28 | 3877.37 | 3820.60 | 3729.78 | 3594.14 | 3431.01 | 3251.75 | 3040.23 |
| 315.0 | 3892.30 | 3909.63 | 3891.71 | 3824.19 | 3740.53 | 3622.82 | 3441.17 | 3269.08 | 3079.66 |
| 360.0 | 3852.27 | 3902.46 | 3906.05 | 3876.77 | 3799.09 | 3683.77 | 3573.22 | 3374.84 | 3191.40 |

| C/γ(°) | 9.0 | 10.0 | 11.0 | 12.0 | 13.0 | 14.0 | 15.0 | 16.0 | 17.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 2998.40 | 2744.45 | 2528.15 | 2322.60 | 2052.51 | 1855.93 | 1667.70 | 1457.37 | 1309.78 |
| 45.0 | 2645.26 | 2428.36 | 2210.86 | 1979.61 | 1753.75 | 1581.06 | 1401.21 | 1244.06 | 1123.35 |
| 90.0 | 2368.01 | 2130.79 | 1907.31 | 1722.08 | 1529.08 | 1357.59 | 1186.51 | 1098.50 | 966.32 |
| 135.0 | 2367.41 | 2127.80 | 1923.45 | 1732.24 | 1509.36 | 1359.38 | 1221.95 | 1087.50 | 972.78 |
| 180.0 | 2213.25 | 1982.00 | 1788.40 | 1590.02 | 1431.68 | 1187.29 | 1141.10 | 1017.53 | 921.45 |
| 225.0 | 2550.85 | 2251.49 | 2066.26 | 1864.89 | 1655.16 | 1468.13 | 1272.74 | 1182.93 | 1050.69 |
| 270.0 | 2815.56 | 2608.21 | 2368.01 | 2152.30 | 1922.85 | 1731.04 | 1532.06 | 1371.93 | 1199.24 |
| 315.0 | 2854.40 | 2617.18 | 2399.08 | 2155.29 | 1927.03 | 1735.22 | 1518.32 | 1382.68 | 1189.02 |
| 360.0 | 2998.40 | 2744.45 | 2528.15 | 2322.60 | 2052.51 | 1855.93 | 1667.70 | 1457.37 | 1309.78 |

| C/γ(°) | 18.0 | 19.0 | 20.0 | 21.0 | 22.0 | 23.0 | 24.0 | 25.0 | 26.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 1175.94 | 1046.27 | 936.33 | 852.08 | 771.41 | 711.06 | 654.89 | 600.52 | 550.92 |
| 45.0 | 999.07 | 907.05 | 817.42 | 734.96 | 681.18 | 628.00 | 573.03 | 522.84 | 470.85 |
| 90.0 | 876.75 | 799.25 | 727.85 | 666.72 | 616.95 | 561.86 | 502.16 | 449.64 | 390.72 |
| 135.0 | 883.15 | 797.10 | 725.40 | 667.44 | 616.05 | 563.47 | 503.72 | 442.17 | 390.78 |
| 180.0 | 828.65 | 751.45 | 693.31 | 638.10 | 582.95 | 531.62 | 477.96 | 411.82 | 359.59 |
| 225.0 | 937.46 | 854.29 | 771.11 | 704.31 | 652.86 | 599.68 | 548.53 | 489.44 | 430.40 |
| 270.0 | 1080.93 | 977.56 | 865.82 | 790.53 | 726.60 | 673.42 | 613.66 | 567.06 | 513.87 |
| 315.0 | 1088.88 | 982.16 | 893.25 | 794.95 | 729.46 | 673.65 | 613.06 | 564.07 | 511.78 |
| 360.0 | 1175.94 | 1046.27 | 936.33 | 852.08 | 771.41 | 711.06 | 654.89 | 600.52 | 550.92 |

| C/γ(°) | 27.0 | 28.0 | 29.0 | 30.0 | 31.0 | 32.0 | 33.0 | 34.0 | 35.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 491.17 | 429.62 | 377.04 | 326.25 | 307.13 | 215.59 | 174.96 | 130.38 | 101.52 |
| 45.0 | 405.72 | 353.74 | 304.14 | 246.18 | 200.77 | 157.93 | 120.04 | 92.62 | 74.33 |
| 90.0 | 339.81 | 281.85 | 228.20 | 185.23 | 147.77 | 108.75 | 86.10 | 70.87 | 58.50 |
| 135.0 | 341.19 | 304.14 | 226.76 | 183.38 | 138.69 | 108.51 | 84.55 | 69.97 | 59.69 |
| 180.0 | 309.28 | 254.31 | 203.16 | 163.24 | 124.53 | 93.63 | 75.05 | 62.20 | 54.97 |
| 225.0 | 376.62 | 324.22 | 263.15 | 218.04 | 176.81 | 132.47 | 103.49 | 81.14 | 64.95 |
| 270.0 | 452.33 | 390.78 | 339.40 | 306.53 | 228.32 | 185.77 | 144.42 | 112.81 | 85.51 |
| 315.0 | 459.14 | 391.68 | 341.43 | 290.82 | 238.00 | 189.60 | 151.59 | 114.49 | 86.16 |
| 360.0 | 491.17 | 429.62 | 377.04 | 326.25 | 307.13 | 215.59 | 174.96 | 130.38 | 101.52 |

| C/γ(°) | 36.0 | 37.0 | 38.0 | 39.0 | 40.0 | 41.0 | 42.0 | 43.0 | 44.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 80.13 | 64.89 | 54.79 | 47.32 | 40.51 | 35.79 | 31.67 | 28.20 | 25.51 |
| 45.0 | 61.84 | 54.26 | 46.01 | 39.80 | 35.43 | 31.85 | 27.96 | 25.34 | 23.00 |
| 90.0 | 50.85 | 44.46 | 38.06 | 34.12 | 30.65 | 27.01 | 24.80 | 22.23 | 19.90 |
| 135.0 | 51.99 | 45.83 | 40.15 | 35.79 | 32.45 | 29.10 | 26.11 | 23.84 | 21.57 |
| 180.0 | 47.74 | 41.71 | 37.47 | 34.06 | 30.29 | 27.49 | 25.10 | 22.47 | 20.67 |
| 225.0 | 55.39 | 48.82 | 42.36 | 37.58 | 33.58 | 30.06 | 27.31 | 24.62 | 22.23 |
| 270.0 | 68.12 | 58.92 | 51.57 | 43.62 | 38.66 | 34.78 | 30.77 | 27.96 | 25.51 |
| 315.0 | 69.73 | 58.26 | 50.55 | 43.02 | 37.11 | 33.16 | 29.88 | 26.35 | 23.84 |
| 360.0 | 80.13 | 64.89 | 54.79 | 47.32 | 40.51 | 35.79 | 31.67 | 28.20 | 25.51 |

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 | 22.89 | 20.61 | 18.82 | 17.33 | 15.72 | 14.64 | 13.74 | 12.91 | 12.19 |
| 45.0 | 20.44 | 18.82 | 17.39 | 16.01 | 14.82 | 13.98 | 13.21 | 12.43 | 11.83 |
| 90.0 | 18.46 | 16.85 | 15.42 | 14.52 | 13.68 | 12.67 | 12.19 | 11.65 | 11.11 |
| 135.0 | 19.90 | 18.22 | 16.85 | 15.77 | 14.82 | 13.86 | 13.15 | 12.55 | 11.95 |
| 180.0 | 19.12 | 17.63 | 16.25 | 15.30 | 14.34 | 13.50 | 12.85 | 12.31 | 11.83 |
| 225.0 | 20.32 | 18.64 | 16.91 | 15.72 | 14.70 | 13.62 | 12.91 | 12.25 | 11.71 |
| 270.0 | 23.06 | 20.91 | 19.30 | 17.75 | 16.55 | 15.36 | 14.34 | 13.62 | 12.97 |
| 315.0 | 21.69 | 19.30 | 17.69 | 16.31 | 15.06 | 13.92 | 13.09 | 12.31 | 11.77 |
| 360.0 | 22.89 | 20.61 | 18.82 | 17.33 | 15.72 | 14.64 | 13.74 | 12.91 | 12.19 |

| C/γ(°) | 54.0 | 55.0 | 56.0 | 57.0 | 58.0 | 59.0 | 60.0 | 61.0 | 62.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 11.65 | 11.17 | 10.82 | 10.52 | 10.22 | 10.04 | 9.86 | 9.74 | 9.62 |
| 45.0 | 11.35 | 10.93 | 10.64 | 10.40 | 10.16 | 10.04 | 9.80 | 9.62 | 9.44 |
| 90.0 | 10.76 | 10.46 | 10.22 | 10.04 | 9.92 | 9.68 | 9.50 | 9.26 | 9.02 |
| 135.0 | 11.53 | 11.23 | 10.93 | 10.64 | 10.46 | 10.28 | 9.98 | 9.74 | 9.50 |
| 180.0 | 11.35 | 11.05 | 10.82 | 10.52 | 10.40 | 10.16 | 9.92 | 9.62 | 9.32 |
| 225.0 | 11.23 | 10.88 | 10.52 | 10.28 | 10.04 | 9.86 | 9.68 | 9.50 | 9.32 |
| 270.0 | 12.37 | 11.95 | 11.59 | 11.17 | 10.93 | 10.70 | 10.46 | 10.28 | 10.04 |
| 315.0 | 11.17 | 10.82 | 10.52 | 10.22 | 9.98 | 9.80 | 9.62 | 9.56 | 9.38 |
| 360.0 | 11.65 | 11.17 | 10.82 | 10.52 | 10.22 | 10.04 | 9.86 | 9.74 | 9.62 |

| C/γ(°) | 63.0 | 64.0 | 65.0 | 66.0 | 67.0 | 68.0 | 69.0 | 70.0 | 71.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 9.44 | 9.26 | 9.02 | 8.72 | 8.37 | 8.07 | 7.77 | 7.53 | 7.23 |
| 45.0 | 9.20 | 8.90 | 8.60 | 8.31 | 7.89 | 7.65 | 7.35 | 7.11 | 6.87 |
| 90.0 | 8.72 | 8.43 | 8.01 | 7.77 | 7.47 | 7.11 | 6.93 | 6.69 | 6.51 |
| 135.0 | 9.14 | 8.78 | 8.37 | 8.07 | 7.83 | 7.41 | 7.17 | 6.99 | 6.69 |
| 180.0 | 9.02 | 8.72 | 8.31 | 8.01 | 7.71 | 7.41 | 7.17 | 6.87 | 6.69 |
| 225.0 | 9.08 | 8.78 | 8.43 | 8.13 | 7.83 | 7.53 | 7.23 | 6.99 | 6.81 |
| 270.0 | 9.86 | 9.62 | 9.26 | 8.90 | 8.60 | 8.25 | 7.95 | 7.59 | 7.29 |
| 315.0 | 9.20 | 9.02 | 8.72 | 8.48 | 8.13 | 7.83 | 7.53 | 7.23 | 6.99 |
| 360.0 | 9.44 | 9.26 | 9.02 | 8.72 | 8.37 | 8.07 | 7.77 | 7.53 | 7.23 |

| C/γ(°) | 72.0 | 73.0 | 74.0 | 75.0 | 76.0 | 77.0 | 78.0 | 79.0 | 80.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 7.05 | 6.81 | 6.57 | 6.39 | 6.21 | 6.04 | 5.92 | 5.80 | 5.68 |
| 45.0 | 6.69 | 6.51 | 6.33 | 6.09 | 5.98 | 5.86 | 5.68 | 5.56 | 5.44 |
| 90.0 | 6.33 | 6.15 | 5.98 | 5.86 | 5.74 | 5.56 | 5.50 | 5.38 | 5.26 |
| 135.0 | 6.57 | 6.39 | 6.21 | 6.04 | 5.92 | 5.74 | 5.62 | 5.50 | 5.38 |
| 180.0 | 6.51 | 6.33 | 6.15 | 5.98 | 5.86 | 5.68 | 5.56 | 5.44 | 5.32 |
| 225.0 | 6.57 | 6.39 | 6.21 | 6.04 | 5.92 | 5.80 | 5.68 | 5.56 | 5.38 |
| 270.0 | 7.05 | 6.81 | 6.63 | 6.39 | 6.21 | 6.09 | 5.92 | 5.74 | 5.68 |
| 315.0 | 6.75 | 6.57 | 6.39 | 6.21 | 6.04 | 5.92 | 5.80 | 5.62 | 5.50 |
| 360.0 | 7.05 | 6.81 | 6.57 | 6.39 | 6.21 | 6.04 | 5.92 | 5.80 | 5.68 |

| C/γ(°) | 81.0 | 82.0 | 83.0 | 84.0 | 85.0 | 86.0 | 87.0 | 88.0 | 89.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 5.56 | 5.38 | 5.32 | 5.26 | 5.14 | 4.96 | 4.90 | 4.78 | 4.72 |
| 45.0 | 5.32 | 5.26 | 5.14 | 5.02 | 4.90 | 4.78 | 4.72 | 4.66 | 4.66 |
| 90.0 | 5.14 | 5.08 | 4.96 | 4.84 | 4.78 | 4.66 | 4.60 | 4.48 | 4.48 |
| 135.0 | 5.26 | 5.14 | 5.02 | 4.96 | 4.84 | 4.72 | 4.66 | 4.54 | 4.54 |
| 180.0 | 5.26 | 5.14 | 5.02 | 4.90 | 4.78 | 4.72 | 4.78 | 4.48 | 4.66 |
| 225.0 | 5.26 | 5.20 | 5.14 | 5.02 | 4.90 | 4.78 | 4.72 | 4.66 | 4.54 |
| 270.0 | 5.50 | 5.38 | 5.32 | 5.20 | 5.08 | 4.90 | 4.84 | 4.72 | 4.66 |
| 315.0 | 5.44 | 5.32 | 5.20 | 5.08 | 5.02 | 4.90 | 4.84 | 4.72 | 4.66 |
| 360.0 | 5.56 | 5.38 | 5.32 | 5.26 | 5.14 | 4.96 | 4.90 | 4.78 | 4.72 |

Intensity data(cd)



| C/γ(°) | 90.0 |
|---|---|
| 0.0 | 4.72 |
| 45.0 | 4.54 |
| 90.0 | 4.60 |
| 135.0 | 4.54 |
| 180.0 | 4.60 |
| 225.0 | 4.48 |
| 270.0 | 4.60 |
| 315.0 | 4.72 |
| 360.0 | 4.72 |