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

LumCAT: 1656-S
Luminaire: 92.70.123.00
Report No: NATA0100
Test No: GC2019120513
LampCAT: LUMINUS CXM-4-AC40
Lamp flux(lm): 589.0
Number of Lamps: 1
Length(mm): 0
Phm Type: C

Voltage(V): 34.5600
Current(A): 0.1470
Power (W): 5.0800
PF: 1.0000
Ballast type: DC
Width(mm): 0
Height(mm): 0

## Photometric Results

Lumens(lm): 524.61
Efficiency(%): 89.07%
Lumens(lm)/Power(W): 103.27
Central intensity(cd): 7779.375
Maximum intensity(cd): 7779.375
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=9.9
[C90/270]Total=9.9
Field angle(10%Imax): [C0/180]Total=20.4
[C90/270]Total=20.4
Maximum s/h(1/2): C0_180=0.17 C90_270=0.17
Maximum s/h(1/4): C0_180=0.18 C90_270=0.18
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 89.07%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.347%

Equipment: GMS1980
Temperature(°C): 25.0
Date: 2019/12/5
Humidity(%): 65.0%
Operator: NT07
Distance(m): 7.50

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 0.0 | 7779.375 | 0.000 | 0 | .000% | .000% |
| 1.0 | 7493.836 | 7.308 | 7.308 | 1.241% | 1.393% |
| 2.0 | 6680.531 | 20.344 | 27.652 | 3.454% | 5.271% |
| 3.0 | 5730.750 | 29.684 | 57.336 | 5.040% | 10.929% |
| 4.0 | 4809.797 | 35.283 | 92.619 | 5.990% | 17.655% |
| 5.0 | 3835.055 | 37.190 | 129.808 | 6.314% | 24.744% |
| 6.0 | 2901.023 | 35.400 | 165.208 | 6.010% | 31.492% |
| 7.0 | 2192.344 | 31.614 | 196.823 | 5.367% | 37.518% |
| 8.0 | 1469.848 | 26.210 | 223.032 | 4.450% | 42.514% |
| 9.0 | 1147.584 | 21.213 | 244.245 | 3.602% | 46.558% |
| 10.0 | 826.988 | 17.869 | 262.114 | 3.034% | 49.964% |
| 11.0 | 606.797 | 14.326 | 276.441 | 2.432% | 52.695% |
| 12.0 | 472.641 | 11.800 | 288.241 | 2.003% | 54.944% |
| 13.0 | 378.471 | 10.101 | 298.341 | 1.715% | 56.869% |
| 14.0 | 317.820 | 8.912 | 307.254 | 1.513% | 58.568% |
| 15.0 | 284.442 | 8.268 | 315.522 | 1.404% | 60.144% |
| 16.0 | 260.859 | 7.990 | 323.512 | 1.357% | 61.667% |
| 17.0 | 241.959 | 7.830 | 331.342 | 1.329% | 63.160% |
| 18.0 | 232.467 | 7.822 | 339.164 | 1.328% | 64.651% |
| 19.0 | 225.204 | 7.963 | 347.127 | 1.352% | 66.169% |
| 20.0 | 219.600 | 8.141 | 355.268 | 1.382% | 67.721% |
| 21.0 | 214.692 | 8.339 | 363.607 | 1.416% | 69.310% |
| 22.0 | 210.030 | 8.535 | 372.142 | 1.449% | 70.937% |
| 23.0 | 206.452 | 8.739 | 380.881 | 1.484% | 72.603% |
| 24.0 | 202.795 | 8.948 | 389.829 | 1.519% | 74.308% |
| 25.0 | 199.139 | 9.139 | 398.968 | 1.552% | 76.050% |
| 26.0 | 196.404 | 9.337 | 408.305 | 1.585% | 77.830% |
| 27.0 | 193.437 | 9.538 | 417.842 | 1.619% | 79.648% |
| 28.0 | 190.842 | 9.729 | 427.571 | 1.652% | 81.503% |
| 29.0 | 187.277 | 9.893 | 437.464 | 1.680% | 83.389% |
| 30.0 | 183.748 | 10.018 | 447.482 | 1.701% | 85.298% |
| 31.0 | 180.577 | 10.139 | 457.62 | 1.721% | 87.231% |
| 32.0 | 177.370 | 10.255 | 467.875 | 1.741% | 89.185% |
| 33.0 | 170.585 | 10.251 | 478.126 | 1.740% | 91.139% |
| 34.0 | 145.329 | 9.560 | 487.686 | 1.623% | 92.962% |
| 35.0 | 108.239 | 7.875 | 495.561 | 1.337% | 94.463% |
| 36.0 | 69.525 | 5.660 | 501.221 | .961% | 95.542% |
| 37.0 | 35.430 | 3.423 | 504.644 | .581% | 96.194% |

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 38.0 | 14.407 | 1.664 | 506.308 | .282% | 96.511% |
| 39.0 | 10.005 | 0.833 | 507.141 | .141% | 96.670% |
| 40.0 | 9.042 | 0.664 | 507.806 | .113% | 96.797% |
| 41.0 | 8.198 | 0.614 | 508.419 | .104% | 96.914% |
| 42.0 | 7.172 | 0.558 | 508.978 | .095% | 97.020% |
| 43.0 | 6.216 | 0.496 | 509.474 | .084% | 97.115% |
| 44.0 | 5.562 | 0.445 | 509.918 | .075% | 97.200% |
| 45.0 | 5.182 | 0.413 | 510.331 | .070% | 97.278% |
| 46.0 | 4.985 | 0.398 | 510.729 | .068% | 97.354% |
| 47.0 | 4.830 | 0.390 | 511.119 | .066% | 97.429% |
| 48.0 | 4.669 | 0.384 | 511.503 | .065% | 97.502% |
| 49.0 | 4.514 | 0.377 | 511.88 | .064% | 97.574% |
| 50.0 | 4.409 | 0.372 | 512.252 | .063% | 97.645% |
| 51.0 | 4.310 | 0.369 | 512.621 | .063% | 97.715% |
| 52.0 | 4.289 | 0.369 | 512.99 | .063% | 97.785% |
| 53.0 | 4.247 | 0.371 | 513.362 | .063% | 97.856% |
| 54.0 | 4.198 | 0.372 | 513.734 | .063% | 97.927% |
| 55.0 | 4.148 | 0.373 | 514.106 | .063% | 97.998% |
| 56.0 | 4.134 | 0.374 | 514.481 | .064% | 98.069% |
| 57.0 | 4.022 | 0.373 | 514.854 | .063% | 98.140% |
| 58.0 | 3.930 | 0.368 | 515.221 | .062% | 98.210% |
| 59.0 | 3.825 | 0.363 | 515.584 | .062% | 98.280% |
| 60.0 | 3.720 | 0.356 | 515.94 | .061% | 98.348% |
| 61.0 | 3.593 | 0.349 | 516.289 | .059% | 98.414% |
| 62.0 | 3.459 | 0.340 | 516.629 | .058% | 98.479% |
| 63.0 | 3.312 | 0.329 | 516.958 | .056% | 98.542% |
| 64.0 | 3.178 | 0.318 | 517.277 | .054% | 98.602% |
| 65.0 | 3.045 | 0.308 | 517.585 | .052% | 98.661% |
| 66.0 | 2.953 | 0.299 | 517.884 | .051% | 98.718% |
| 67.0 | 2.862 | 0.292 | 518.176 | .050% | 98.774% |
| 68.0 | 2.813 | 0.287 | 518.464 | .049% | 98.829% |
| 69.0 | 2.791 | 0.286 | 518.75 | .049% | 98.883% |
| 70.0 | 2.777 | 0.286 | 519.036 | .049% | 98.938% |
| 71.0 | 2.735 | 0.285 | 519.321 | .048% | 98.992% |
| 72.0 | 2.700 | 0.283 | 519.603 | .048% | 99.046% |
| 73.0 | 2.707 | 0.283 | 519.886 | .048% | 99.100% |
| 74.0 | 2.686 | 0.284 | 520.17 | .048% | 99.154% |
| 75.0 | 2.679 | 0.283 | 520.453 | .048% | 99.208% |

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 76.0 | 2.672 | 0.284 | 520.737 | .048% | 99.262% |
| 77.0 | 2.644 | 0.283 | 521.02 | .048% | 99.316% |
| 78.0 | 2.630 | 0.282 | 521.303 | .048% | 99.370% |
| 79.0 | 2.616 | 0.282 | 521.585 | .048% | 99.423% |
| 80.0 | 2.602 | 0.281 | 521.866 | .048% | 99.477% |
| 81.0 | 2.588 | 0.281 | 522.146 | .048% | 99.531% |
| 82.0 | 2.566 | 0.279 | 522.426 | .047% | 99.584% |
| 83.0 | 2.566 | 0.279 | 522.705 | .047% | 99.637% |
| 84.0 | 2.538 | 0.278 | 522.983 | .047% | 99.690% |
| 85.0 | 2.524 | 0.276 | 523.259 | .047% | 99.743% |
| 86.0 | 2.503 | 0.275 | 523.534 | .047% | 99.795% |
| 87.0 | 2.482 | 0.273 | 523.807 | .046% | 99.847% |
| 88.0 | 2.454 | 0.270 | 524.077 | .046% | 99.899% |
| 89.0 | 2.419 | 0.267 | 524.344 | .045% | 99.950% |
| 90.0 | 2.412 | 0.265 | 524.609 | .045% | 100.000% |

## Zonal flux distribution table



ZONAL LUMEN SUMMARY

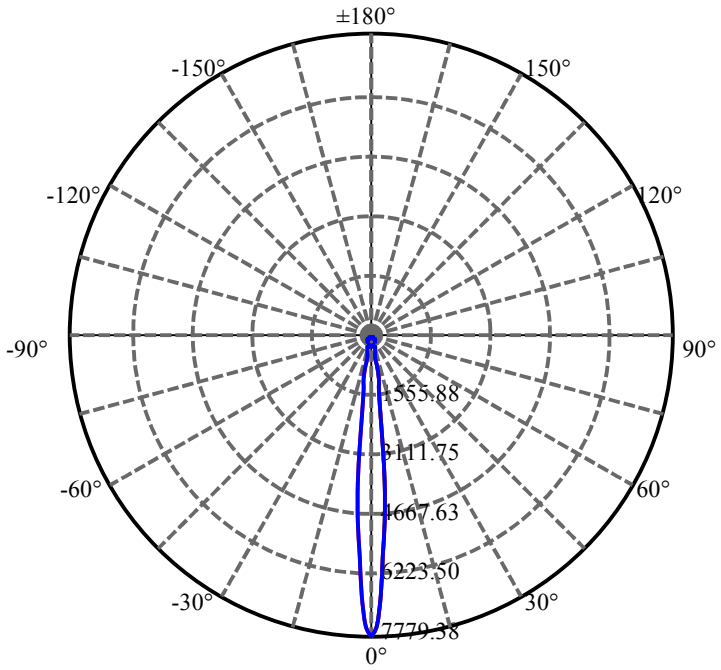
| Zone | Lumens | %Lamp | %Fixt |
|---|---|---|---|
| 0-30 | 447.48 | 75.97% | 85.30% |
| 0-40 | 507.81 | 86.21% | 96.80% |
| 0-60 | 515.94 | 87.60% | 98.35% |
| 0-90 | 524.34 | 89.02% | 99.95% |
| 0-120 | 524.34 | 89.02% | 99.95% |
| 0-180 | 524.61 | 89.07% | 100.00% |
| 60-90 | 8.76 | 1.49% | 1.67% |
| 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% |
| 0-27.19 | 419.69 | 71.25% | 80.00% |

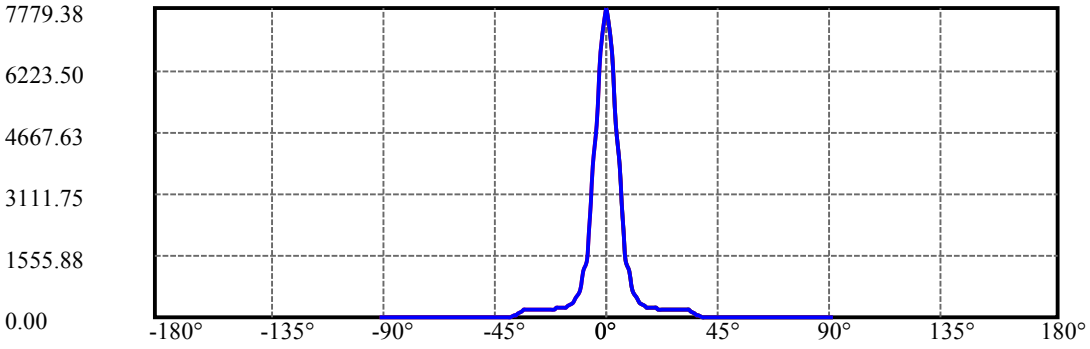
ZONAL LUMEN SUMMARY

| | |
|---|---|
| 0-10 | 262.11 |
| 10-20 | 93.15 |
| 20-30 | 92.21 |
| 30-40 | 60.32 |
| 40-50 | 4.45 |
| 50-60 | 3.69 |
| 60-70 | 3.10 |
| 70-80 | 2.83 |
| 80-90 | 2.48 |
| 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:10.2 Right:10.2
:C90/270Left:10.2 Right:10.2

Beam Angle(50%Imax):C0/180Left:4.9 Right:4.9
:C90/270Left:4.9 Right:4.9

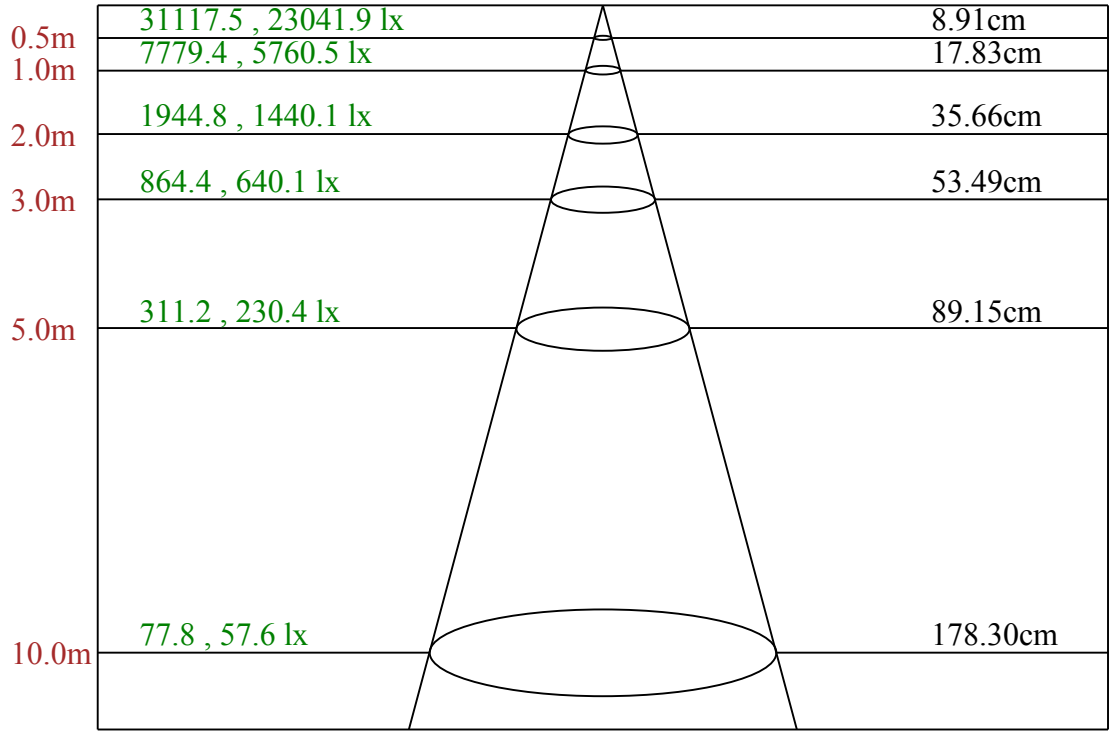
Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/12/5
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

## Lux distance Curve





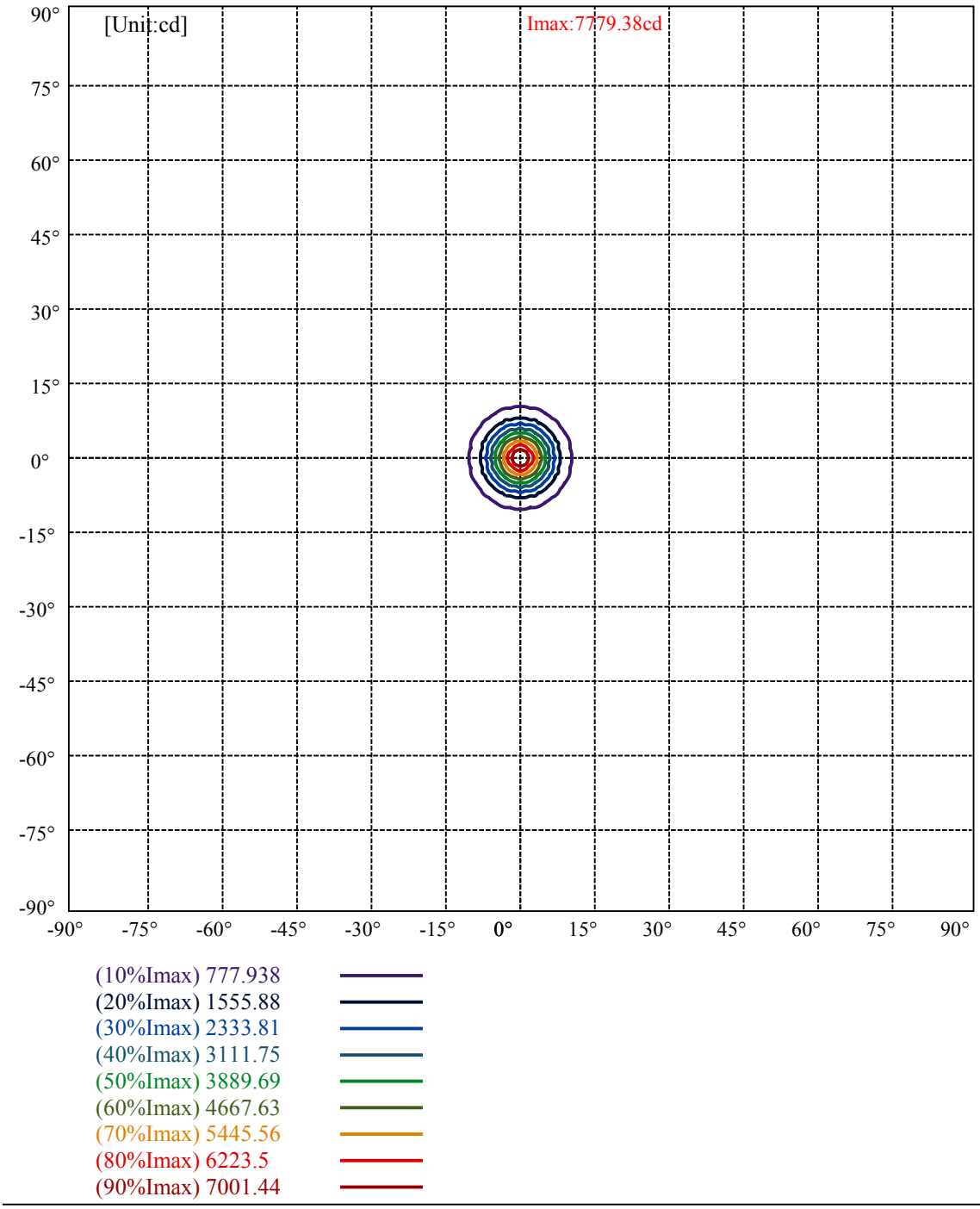

Max , Ave

Beam angle of C0 plane 10.19

| | | |
|---|---|---|
| Equipment: GMS1980 | Date: 2019/12/5 | Operator: NT07 |
| Temperature(°C): 25.0 | Humidity(%): 65.0% | Distance(m): 7.50 |

ISO-Intensity(V-H)





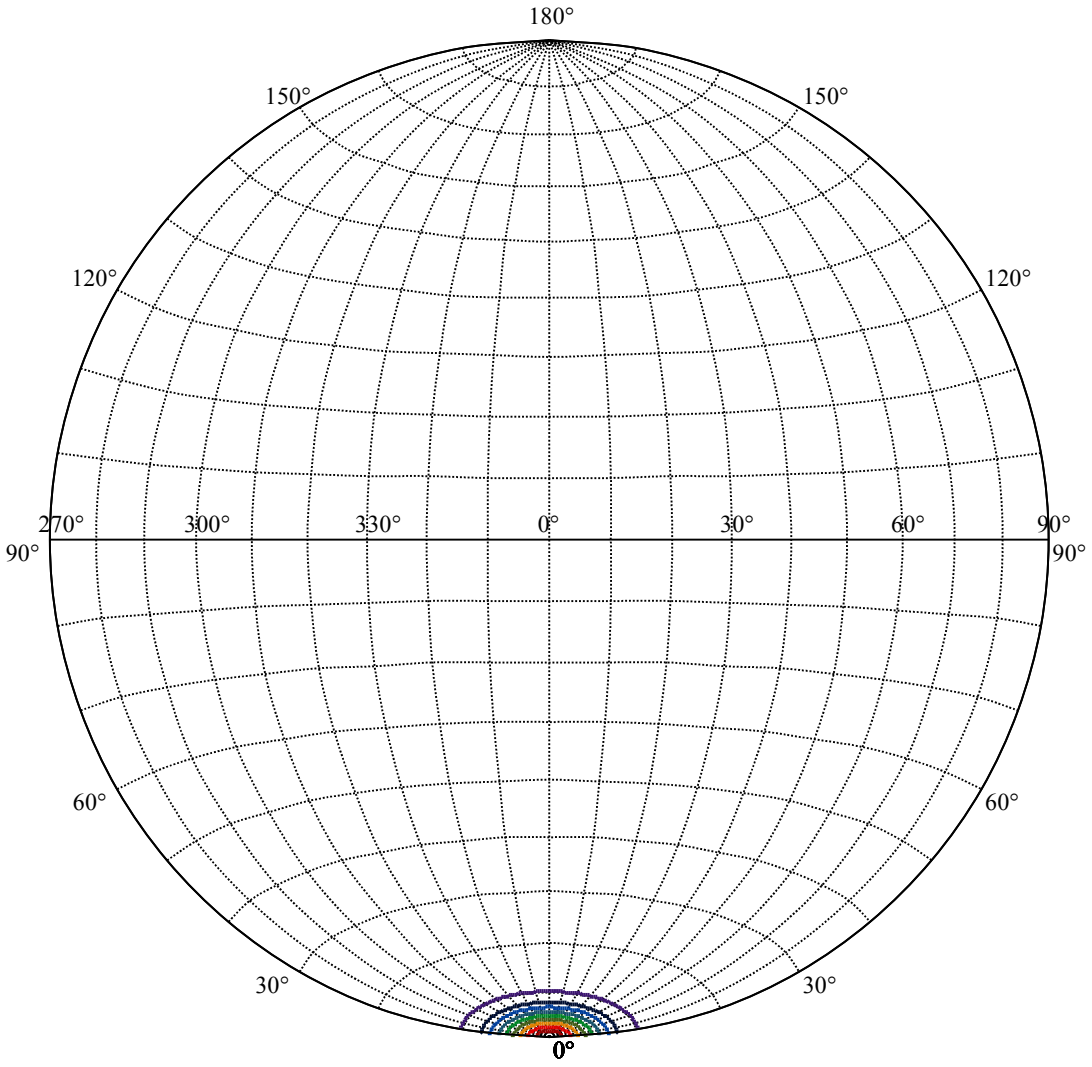

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/12/5
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

ISO candela diagram on circular web






House [Unit:cd] Road

Imax:7779.38

(10%Imax) 777.938
(20%Imax) 1555.88
(30%Imax) 2333.81
(40%Imax) 3111.75
(50%Imax) 3889.69
(60%Imax) 4667.63
(70%Imax) 5445.56
(80%Imax) 6223.5
(90%Imax) 7001.44

Equipment: GMS1980 Date: 2019/12/5 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

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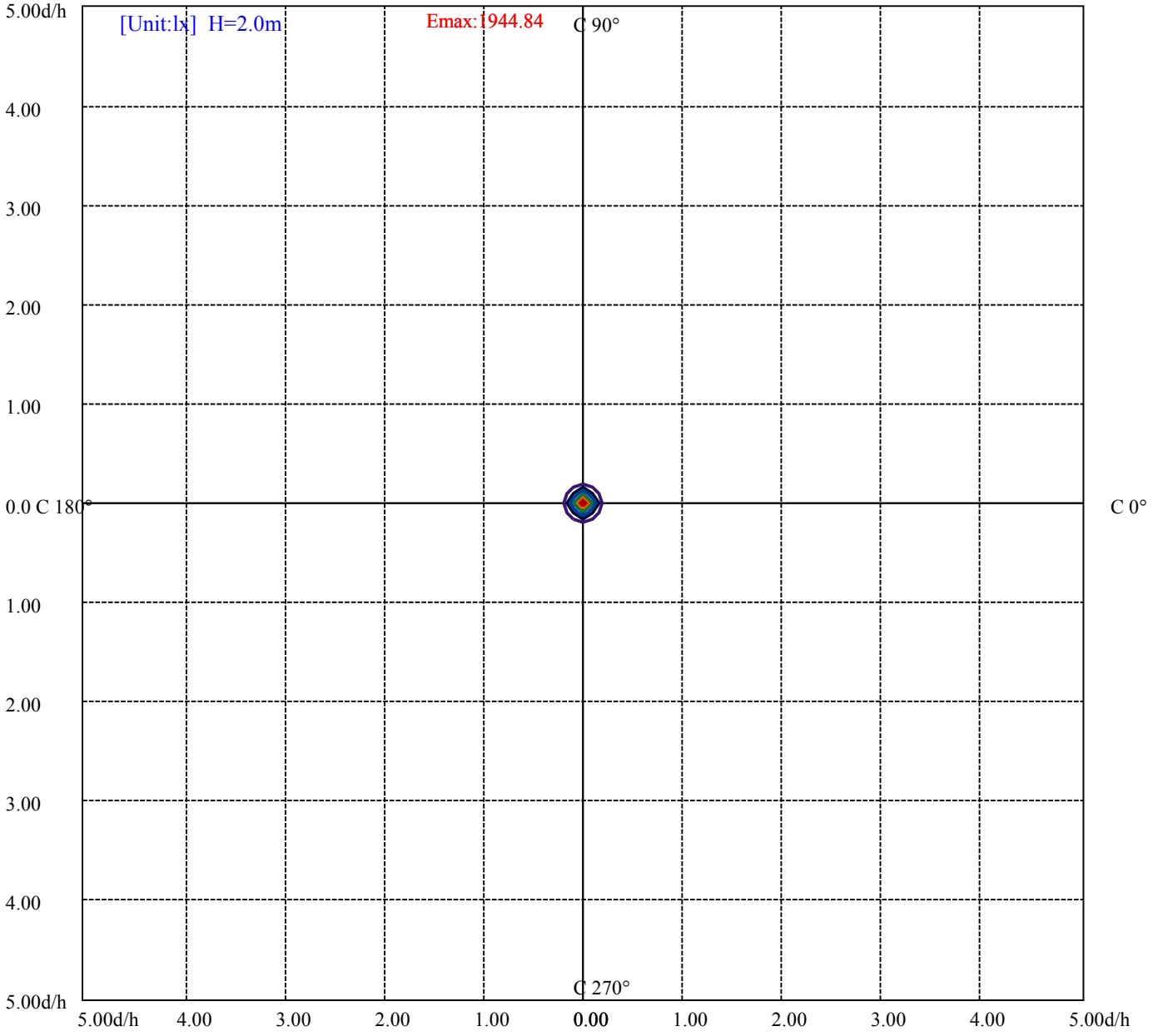
ISO illuminance diagram






(10%Emax) 194.4832
(20%Emax) 388.9675
(30%Emax) 583.45
(40%Emax) 777.9325
(50%Emax) 972.4175
(60%Emax) 1166.9
(70%Emax) 1361.382
(80%Emax) 1555.868
(90%Emax) 1750.35

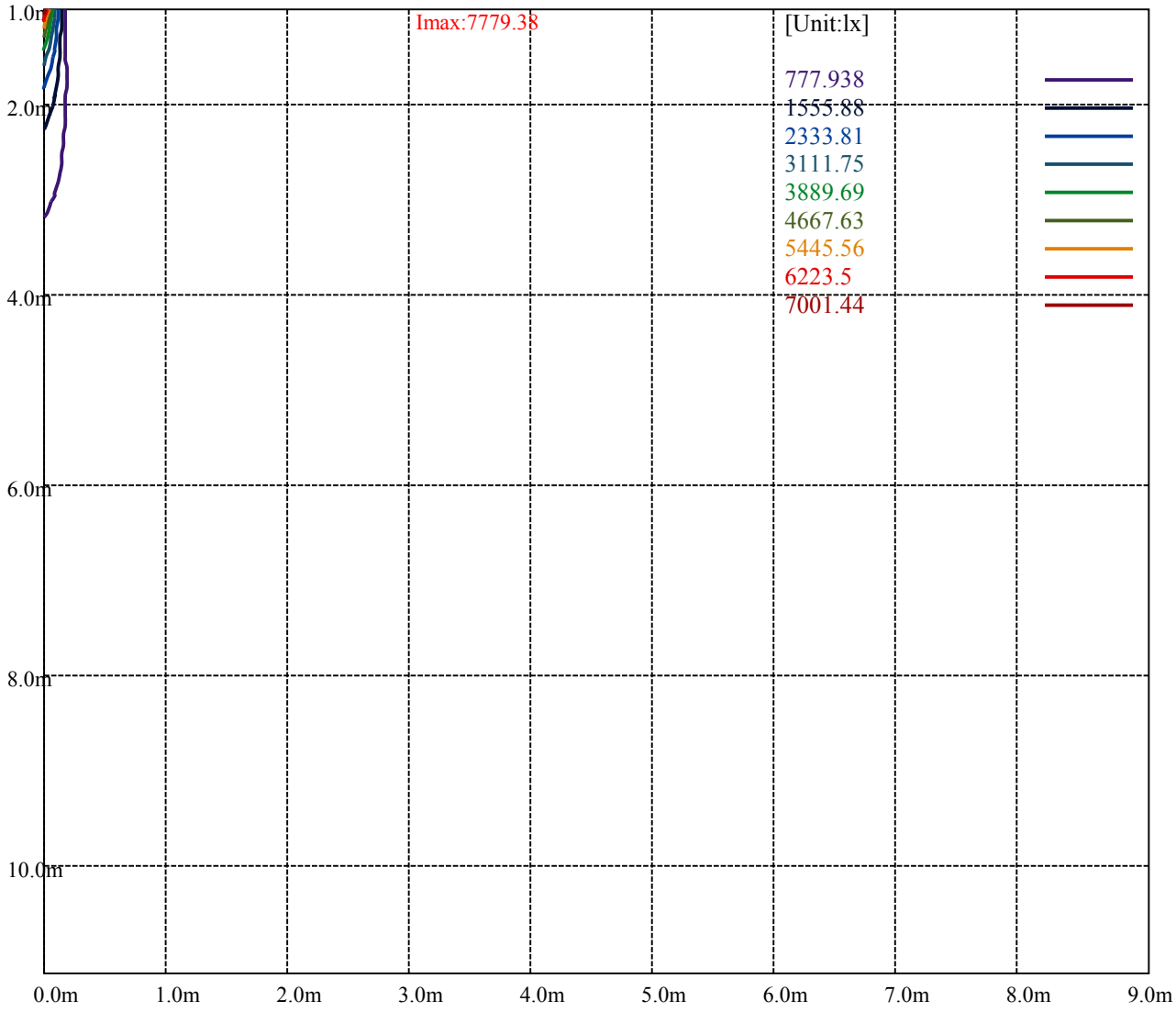
Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/12/5
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Space ISO Lux diagram






Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/12/5
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

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## Luminance Limitting Curve(no luminous side)



Luminance Table

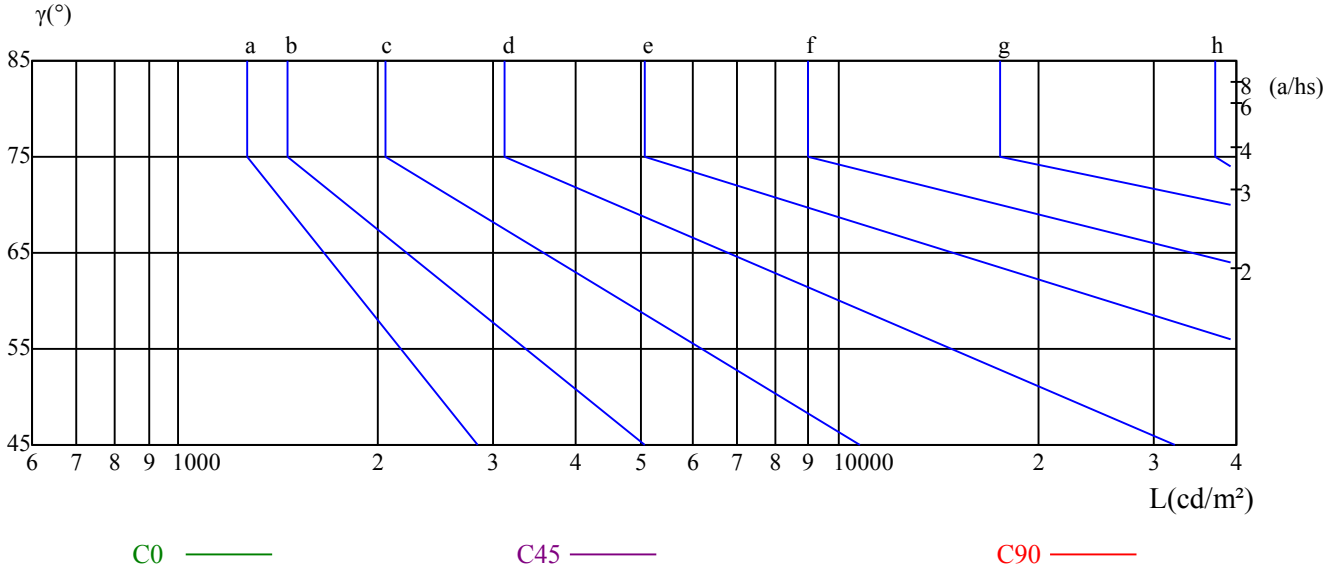
| γ | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 |
|---|---|---|---|---|---|---|---|---|---|
| C0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C90 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| 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



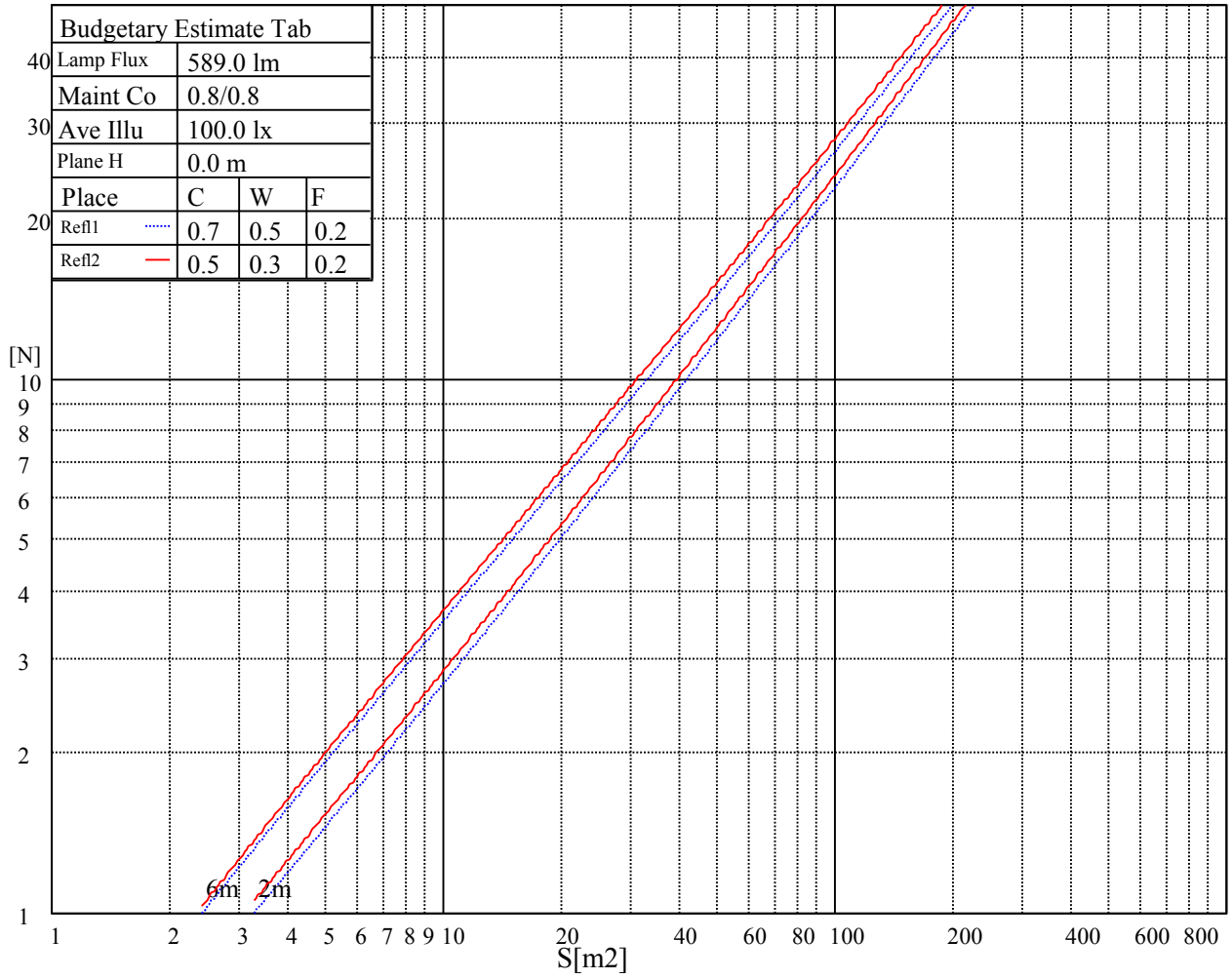

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/12/5
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

## Budgetary Estimate Table






Equipment: GMS1980 Date: 2019/12/5 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

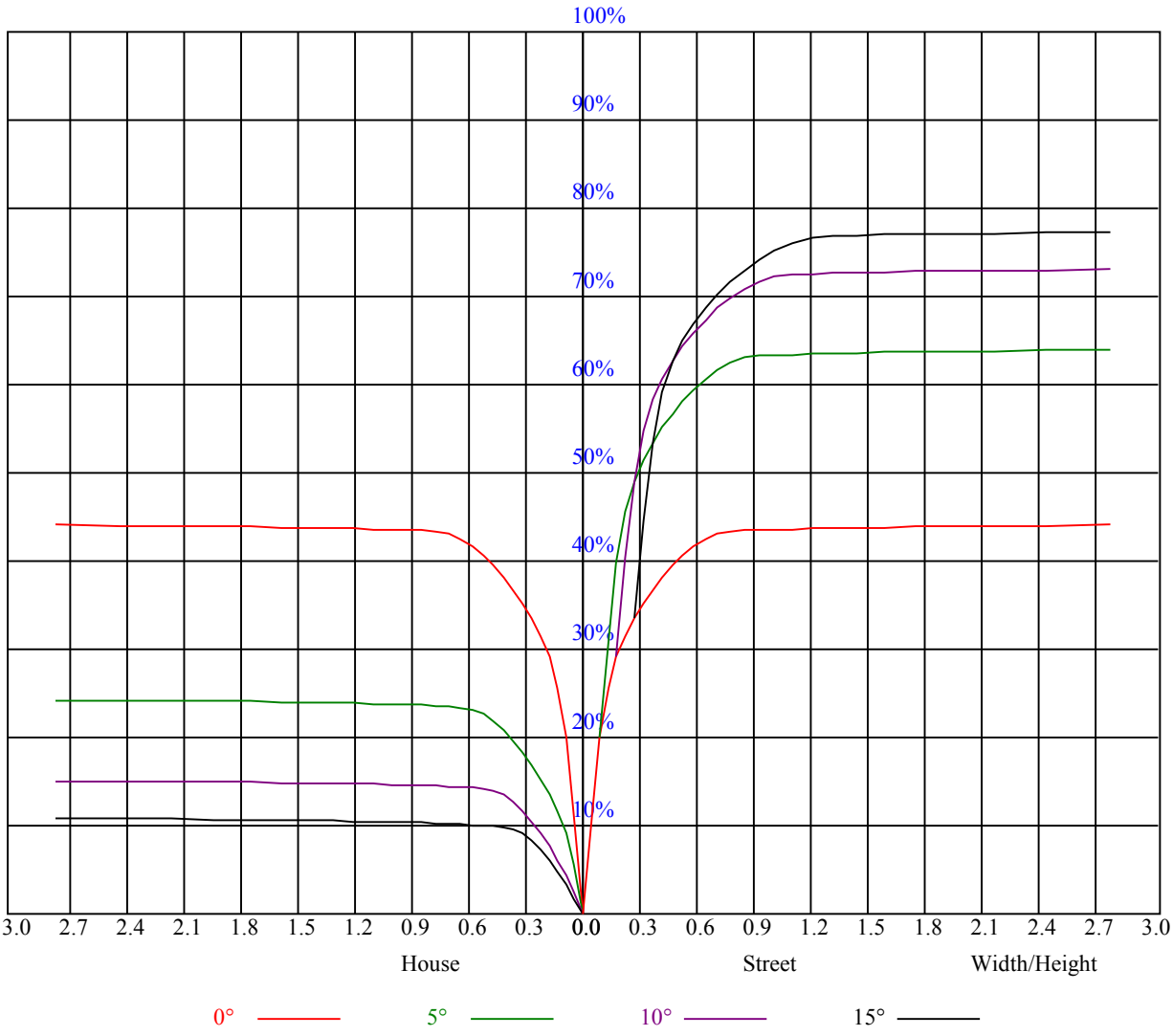
Utilization factor table for indoor luminaire



| 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 | 0.97 | 0.98 | 0.97 | 0.95 | 0.95 | 0.93 | 0.92 | 0.91 | 0.90 | 0.90 | 0.88 | 0.88 | 0.87 | 0.85 |
| 2 | 0.95 | 0.92 | 0.90 | 0.94 | 0.91 | 0.89 | 0.91 | 0.89 | 0.87 | 0.88 | 0.87 | 0.85 | 0.86 | 0.85 | 0.84 | 0.82 |
| 3 | 0.91 | 0.88 | 0.85 | 0.90 | 0.87 | 0.84 | 0.88 | 0.85 | 0.83 | 0.86 | 0.83 | 0.82 | 0.84 | 0.82 | 0.80 | 0.79 |
| 4 | 0.87 | 0.84 | 0.81 | 0.86 | 0.83 | 0.80 | 0.85 | 0.82 | 0.80 | 0.83 | 0.81 | 0.79 | 0.81 | 0.79 | 0.78 | 0.77 |
| 5 | 0.84 | 0.80 | 0.78 | 0.83 | 0.80 | 0.77 | 0.82 | 0.79 | 0.77 | 0.81 | 0.78 | 0.76 | 0.79 | 0.77 | 0.75 | 0.74 |
| 6 | 0.81 | 0.77 | 0.75 | 0.81 | 0.77 | 0.74 | 0.79 | 0.76 | 0.74 | 0.78 | 0.76 | 0.74 | 0.77 | 0.75 | 0.73 | 0.72 |
| 7 | 0.79 | 0.75 | 0.72 | 0.78 | 0.75 | 0.72 | 0.77 | 0.74 | 0.72 | 0.76 | 0.73 | 0.71 | 0.75 | 0.73 | 0.71 | 0.70 |
| 8 | 0.76 | 0.73 | 0.70 | 0.76 | 0.72 | 0.70 | 0.75 | 0.72 | 0.70 | 0.74 | 0.72 | 0.69 | 0.74 | 0.71 | 0.69 | 0.68 |
| 9 | 0.74 | 0.71 | 0.68 | 0.74 | 0.71 | 0.68 | 0.73 | 0.70 | 0.68 | 0.73 | 0.70 | 0.68 | 0.72 | 0.69 | 0.68 | 0.67 |
| 10 | 0.72 | 0.69 | 0.67 | 0.72 | 0.69 | 0.66 | 0.72 | 0.68 | 0.66 | 0.71 | 0.68 | 0.66 | 0.70 | 0.68 | 0.66 | 0.65 |

## Coefficient Utilization Curve






| | | |
|---|---|---|
| Equipment: GMS1980 | Date: 2019/12/5 | Operator: NT07 |
| Temperature(°C): 25.0 | 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 | 7752.94 | 7731.56 | 6887.25 | 5985.56 | 5163.75 | 4027.50 | 3097.69 | 2467.69 | 1738.69 |
| 45.0 | 7782.75 | 7652.25 | 6694.31 | 5823.00 | 5036.06 | 3946.50 | 3033.00 | 2391.75 | 1657.69 |
| 90.0 | 7805.81 | 7334.44 | 6577.31 | 5592.94 | 4588.88 | 3715.88 | 2810.25 | 2052.56 | 1351.69 |
| 135.0 | 7776.00 | 7680.38 | 7007.63 | 6053.06 | 5157.00 | 4249.69 | 3174.19 | 2414.81 | 1801.13 |
| 180.0 | 7752.94 | 7317.56 | 6459.19 | 5462.44 | 4562.44 | 3570.75 | 2655.56 | 1977.19 | 1108.41 |
| 225.0 | 7782.75 | 7394.63 | 6557.06 | 5583.94 | 4682.25 | 3665.25 | 2752.88 | 2068.88 | 1320.75 |
| 270.0 | 7805.81 | 7609.50 | 6849.00 | 5958.00 | 4930.31 | 4014.56 | 3055.50 | 2235.94 | 1666.69 |
| 315.0 | 7776.00 | 7230.38 | 6412.50 | 5387.06 | 4357.69 | 3490.31 | 2629.13 | 1929.94 | 1113.75 |
| 360.0 | 7752.94 | 7731.56 | 6887.25 | 5985.56 | 5163.75 | 4027.50 | 3097.69 | 2467.69 | 1738.69 |

| C/γ(°) | 9.0 | 10.0 | 11.0 | 12.0 | 13.0 | 14.0 | 15.0 | 16.0 | 17.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 1255.50 | 969.75 | 685.69 | 536.63 | 435.94 | 353.25 | 310.50 | 284.63 | 255.83 |
| 45.0 | 1172.81 | 893.25 | 613.13 | 486.00 | 392.06 | 318.94 | 286.31 | 253.24 | 235.69 |
| 90.0 | 1117.74 | 758.14 | 573.81 | 452.36 | 351.62 | 302.63 | 270.73 | 246.60 | 232.09 |
| 135.0 | 1242.56 | 913.50 | 667.69 | 492.75 | 383.06 | 321.19 | 284.63 | 259.14 | 246.26 |
| 180.0 | 1023.47 | 716.29 | 523.29 | 407.31 | 335.42 | 284.96 | 256.39 | 237.32 | 224.04 |
| 225.0 | 1099.24 | 784.74 | 568.01 | 441.39 | 361.07 | 300.66 | 271.97 | 252.17 | 235.07 |
| 270.0 | 1195.88 | 853.88 | 646.31 | 506.25 | 393.19 | 336.94 | 301.50 | 284.06 | 253.46 |
| 315.0 | 1073.48 | 726.36 | 576.45 | 458.44 | 375.41 | 324.00 | 293.51 | 269.72 | 253.24 |
| 360.0 | 1255.50 | 969.75 | 685.69 | 536.63 | 435.94 | 353.25 | 310.50 | 284.63 | 255.83 |

| C/γ(°) | 18.0 | 19.0 | 20.0 | 21.0 | 22.0 | 23.0 | 24.0 | 25.0 | 26.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 243.73 | 234.84 | 226.24 | 220.61 | 215.61 | 210.49 | 205.88 | 201.99 | 198.06 |
| 45.0 | 224.78 | 217.97 | 211.56 | 208.24 | 205.31 | 201.71 | 197.27 | 194.63 | 192.77 |
| 90.0 | 222.24 | 213.47 | 208.80 | 200.98 | 193.84 | 191.64 | 189.73 | 188.44 | 187.82 |
| 135.0 | 238.95 | 234.11 | 230.46 | 226.91 | 221.12 | 216.39 | 212.01 | 207.90 | 204.64 |
| 180.0 | 217.35 | 213.24 | 210.54 | 209.25 | 208.24 | 207.51 | 206.44 | 202.16 | 198.96 |
| 225.0 | 227.19 | 220.33 | 214.54 | 207.90 | 202.73 | 198.90 | 194.34 | 189.96 | 187.65 |
| 270.0 | 242.83 | 233.89 | 227.14 | 222.08 | 217.13 | 213.08 | 208.91 | 204.98 | 201.71 |
| 315.0 | 242.66 | 233.78 | 227.53 | 221.57 | 216.28 | 211.89 | 207.79 | 203.06 | 199.63 |
| 360.0 | 243.73 | 234.84 | 226.24 | 220.61 | 215.61 | 210.49 | 205.88 | 201.99 | 198.06 |

| C/γ(°) | 27.0 | 28.0 | 29.0 | 30.0 | 31.0 | 32.0 | 33.0 | 34.0 | 35.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 194.29 | 191.19 | 187.59 | 183.71 | 179.94 | 176.46 | 173.48 | 159.47 | 120.38 |
| 45.0 | 190.86 | 188.78 | 185.29 | 182.25 | 180.11 | 178.59 | 175.39 | 153.73 | 111.99 |
| 90.0 | 186.69 | 187.31 | 185.51 | 184.67 | 184.22 | 182.42 | 174.54 | 143.04 | 107.72 |
| 135.0 | 201.15 | 197.83 | 194.40 | 190.52 | 186.02 | 182.76 | 178.48 | 153.56 | 115.48 |
| 180.0 | 195.81 | 192.60 | 188.94 | 185.34 | 182.48 | 179.27 | 164.25 | 133.20 | 97.20 |
| 225.0 | 184.16 | 181.91 | 176.91 | 171.45 | 168.30 | 162.84 | 153.17 | 129.32 | 97.26 |
| 270.0 | 198.34 | 195.02 | 191.53 | 187.93 | 183.32 | 180.17 | 177.30 | 153.34 | 114.98 |
| 315.0 | 196.20 | 192.09 | 188.04 | 184.11 | 180.23 | 176.46 | 168.08 | 136.97 | 100.91 |
| 360.0 | 194.29 | 191.19 | 187.59 | 183.71 | 179.94 | 176.46 | 173.48 | 159.47 | 120.38 |

| C/γ(°) | 36.0 | 37.0 | 38.0 | 39.0 | 40.0 | 41.0 | 42.0 | 43.0 | 44.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 84.09 | 48.60 | 16.48 | 9.23 | 8.33 | 7.48 | 6.41 | 5.51 | 4.78 |
| 45.0 | 76.50 | 42.64 | 15.53 | 11.48 | 10.41 | 9.51 | 8.27 | 7.37 | 6.64 |
| 90.0 | 66.54 | 31.05 | 14.23 | 11.25 | 10.35 | 9.45 | 8.49 | 7.37 | 6.75 |
| 135.0 | 79.14 | 40.50 | 16.14 | 9.56 | 8.61 | 7.82 | 6.92 | 6.02 | 5.40 |
| 180.0 | 52.37 | 24.81 | 11.59 | 9.39 | 8.55 | 7.82 | 6.75 | 5.96 | 5.46 |
| 225.0 | 55.01 | 29.81 | 15.41 | 10.74 | 9.68 | 8.72 | 7.65 | 6.75 | 6.13 |
| 270.0 | 82.58 | 39.94 | 15.24 | 9.84 | 8.78 | 7.99 | 7.03 | 5.91 | 5.12 |
| 315.0 | 59.96 | 26.10 | 10.63 | 8.55 | 7.65 | 6.81 | 5.85 | 4.84 | 4.22 |
| 360.0 | 84.09 | 48.60 | 16.48 | 9.23 | 8.33 | 7.48 | 6.41 | 5.51 | 4.78 |

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 | 4.22 | 3.99 | 3.83 | 3.71 | 3.60 | 3.49 | 3.38 | 3.32 | 3.26 |
| 45.0 | 6.24 | 6.08 | 5.91 | 5.68 | 5.46 | 5.40 | 5.29 | 5.46 | 5.51 |
| 90.0 | 6.36 | 6.13 | 6.02 | 5.79 | 5.68 | 5.63 | 5.57 | 5.57 | 5.57 |
| 135.0 | 5.01 | 4.78 | 4.67 | 4.50 | 4.33 | 4.16 | 3.99 | 3.88 | 3.71 |
| 180.0 | 5.23 | 5.12 | 4.95 | 4.73 | 4.56 | 4.39 | 4.28 | 4.11 | 4.11 |
| 225.0 | 5.79 | 5.63 | 5.46 | 5.29 | 5.12 | 5.06 | 4.95 | 5.01 | 5.06 |
| 270.0 | 4.67 | 4.44 | 4.28 | 4.16 | 3.99 | 3.88 | 3.83 | 3.83 | 3.71 |
| 315.0 | 3.94 | 3.71 | 3.54 | 3.49 | 3.38 | 3.26 | 3.21 | 3.15 | 3.04 |
| 360.0 | 4.22 | 3.99 | 3.83 | 3.71 | 3.60 | 3.49 | 3.38 | 3.32 | 3.26 |

| C/γ(°) | 54.0 | 55.0 | 56.0 | 57.0 | 58.0 | 59.0 | 60.0 | 61.0 | 62.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 3.21 | 3.15 | 3.15 | 3.09 | 3.09 | 3.09 | 3.09 | 3.09 | 3.09 |
| 45.0 | 5.57 | 5.57 | 5.74 | 5.63 | 5.46 | 5.06 | 4.73 | 4.39 | 4.11 |
| 90.0 | 5.40 | 5.12 | 4.95 | 4.67 | 4.39 | 4.11 | 3.99 | 3.71 | 3.54 |
| 135.0 | 3.66 | 3.54 | 3.43 | 3.32 | 3.26 | 3.15 | 3.09 | 3.04 | 2.98 |
| 180.0 | 3.88 | 3.88 | 3.77 | 3.60 | 3.54 | 3.43 | 3.32 | 3.26 | 3.15 |
| 225.0 | 5.18 | 5.29 | 5.29 | 5.23 | 5.01 | 4.89 | 4.56 | 4.28 | 3.94 |
| 270.0 | 3.71 | 3.66 | 3.77 | 3.77 | 3.83 | 3.94 | 4.11 | 4.11 | 3.99 |
| 315.0 | 2.98 | 2.98 | 2.98 | 2.87 | 2.87 | 2.93 | 2.87 | 2.87 | 2.87 |
| 360.0 | 3.21 | 3.15 | 3.15 | 3.09 | 3.09 | 3.09 | 3.09 | 3.09 | 3.09 |

| C/γ(°) | 63.0 | 64.0 | 65.0 | 66.0 | 67.0 | 68.0 | 69.0 | 70.0 | 71.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 3.15 | 3.21 | 3.09 | 2.98 | 2.87 | 2.81 | 2.81 | 2.76 | 2.70 |
| 45.0 | 3.77 | 3.43 | 3.21 | 3.04 | 2.93 | 2.87 | 2.81 | 2.87 | 2.81 |
| 90.0 | 3.32 | 3.15 | 3.04 | 2.93 | 2.81 | 2.81 | 2.76 | 2.76 | 2.70 |
| 135.0 | 2.93 | 2.87 | 2.87 | 2.81 | 2.81 | 2.76 | 2.76 | 2.76 | 2.70 |
| 180.0 | 3.04 | 2.98 | 2.87 | 2.87 | 2.81 | 2.76 | 2.76 | 2.76 | 2.70 |
| 225.0 | 3.54 | 3.32 | 3.09 | 3.04 | 2.93 | 2.81 | 2.81 | 2.81 | 2.76 |
| 270.0 | 3.88 | 3.60 | 3.38 | 3.21 | 2.98 | 2.93 | 2.87 | 2.81 | 2.81 |
| 315.0 | 2.87 | 2.87 | 2.81 | 2.76 | 2.76 | 2.76 | 2.76 | 2.70 | 2.70 |
| 360.0 | 3.15 | 3.21 | 3.09 | 2.98 | 2.87 | 2.81 | 2.81 | 2.76 | 2.70 |

| C/γ(°) | 72.0 | 73.0 | 74.0 | 75.0 | 76.0 | 77.0 | 78.0 | 79.0 | 80.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 2.64 | 2.70 | 2.64 | 2.64 | 2.64 | 2.64 | 2.64 | 2.64 | 2.64 |
| 45.0 | 2.76 | 2.76 | 2.81 | 2.76 | 2.76 | 2.76 | 2.76 | 2.70 | 2.70 |
| 90.0 | 2.64 | 2.70 | 2.64 | 2.64 | 2.59 | 2.59 | 2.53 | 2.53 | 2.53 |
| 135.0 | 2.70 | 2.64 | 2.64 | 2.64 | 2.64 | 2.59 | 2.59 | 2.59 | 2.59 |
| 180.0 | 2.64 | 2.64 | 2.59 | 2.59 | 2.59 | 2.53 | 2.53 | 2.53 | 2.53 |
| 225.0 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.70 | 2.64 | 2.64 | 2.64 |
| 270.0 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.70 | 2.70 | 2.70 | 2.64 |
| 315.0 | 2.70 | 2.70 | 2.64 | 2.64 | 2.64 | 2.64 | 2.64 | 2.59 | 2.53 |
| 360.0 | 2.64 | 2.70 | 2.64 | 2.64 | 2.64 | 2.64 | 2.64 | 2.64 | 2.64 |

| C/γ(°) | 81.0 | 82.0 | 83.0 | 84.0 | 85.0 | 86.0 | 87.0 | 88.0 | 89.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 2.59 | 2.59 | 2.53 | 2.53 | 2.53 | 2.53 | 2.53 | 2.48 | 2.42 |
| 45.0 | 2.70 | 2.64 | 2.64 | 2.59 | 2.53 | 2.53 | 2.48 | 2.42 | 2.42 |
| 90.0 | 2.53 | 2.53 | 2.53 | 2.48 | 2.53 | 2.48 | 2.42 | 2.48 | 2.42 |
| 135.0 | 2.53 | 2.53 | 2.53 | 2.53 | 2.53 | 2.48 | 2.48 | 2.48 | 2.42 |
| 180.0 | 2.53 | 2.48 | 2.53 | 2.48 | 2.48 | 2.48 | 2.48 | 2.42 | 2.42 |
| 225.0 | 2.59 | 2.59 | 2.59 | 2.53 | 2.53 | 2.48 | 2.48 | 2.42 | 2.42 |
| 270.0 | 2.64 | 2.64 | 2.64 | 2.59 | 2.53 | 2.53 | 2.53 | 2.48 | 2.42 |
| 315.0 | 2.59 | 2.53 | 2.53 | 2.59 | 2.53 | 2.53 | 2.48 | 2.48 | 2.42 |
| 360.0 | 2.59 | 2.59 | 2.53 | 2.53 | 2.53 | 2.53 | 2.53 | 2.48 | 2.42 |

Intensity data(cd)



| C/γ(°) | 90.0 |
|---|---|
| 0.0 | 2.42 |
| 45.0 | 2.42 |
| 90.0 | 2.36 |
| 135.0 | 2.42 |
| 180.0 | 2.42 |
| 225.0 | 2.42 |
| 270.0 | 2.42 |
| 315.0 | 2.42 |
| 360.0 | 2.42 |