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: 3-2725-L
Luminaire:
Report No: 220819-B010
Test No: 220819-C010
LampCAT: CITIZEN CLU038
Lamp flux(lm): 2282.7
Number of Lamps: 1
Length(mm): 43
Phm Type: C

Voltage(V): 35.5900
Current(A): 0.4810
Power (W): 17.1180
PF: 0.0000
Ballast type: DC
Width(mm): 43
Height(mm): 0

## Photometric Results

Lumens(lm): 1988.17
Efficiency(%): 87.10%
Lumens(lm)/Power(W): 116.15
Central intensity(cd): 10272.120
Maximum intensity(cd): 10272.120
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=17.1
[C90/270]Total=17.1
Field angle(10%Imax): [C0/180]Total=47.8
[C90/270]Total=47.8
Maximum s/h(1/2): C0_180=0.29 C90_270=0.29
Maximum s/h(1/4): C0_180=0.33 C90_270=0.33
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 87.10%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.055%

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 0.0 | 10272.121 | 0.000 | 0 | .000% | .000% |
| 1.0 | 10172.259 | 9.782 | 9.782 | .429% | .492% |
| 2.0 | 9865.801 | 28.761 | 38.543 | 1.260% | 1.939% |
| 3.0 | 9369.180 | 46.004 | 84.547 | 2.015% | 4.252% |
| 4.0 | 8786.066 | 60.771 | 145.318 | 2.662% | 7.309% |
| 5.0 | 8031.014 | 72.346 | 217.664 | 3.169% | 10.948% |
| 6.0 | 7154.364 | 79.803 | 297.467 | 3.496% | 14.962% |
| 7.0 | 6378.771 | 84.000 | 381.467 | 3.680% | 19.187% |
| 8.0 | 5555.003 | 85.408 | 466.875 | 3.742% | 23.483% |
| 9.0 | 4804.880 | 83.961 | 550.836 | 3.678% | 27.706% |
| 10.0 | 4178.147 | 81.293 | 632.129 | 3.561% | 31.794% |
| 11.0 | 3629.316 | 78.013 | 710.142 | 3.418% | 35.718% |
| 12.0 | 3216.573 | 74.835 | 784.977 | 3.278% | 39.482% |
| 13.0 | 2857.757 | 72.087 | 857.064 | 3.158% | 43.108% |
| 14.0 | 2541.664 | 69.112 | 926.176 | 3.028% | 46.584% |
| 15.0 | 2292.719 | 66.369 | 992.545 | 2.907% | 49.922% |
| 16.0 | 2079.476 | 64.065 | 1056.61 | 2.807% | 53.145% |
| 17.0 | 1866.382 | 61.448 | 1118.058 | 2.692% | 56.235% |
| 18.0 | 1703.032 | 58.852 | 1176.909 | 2.578% | 59.195% |
| 19.0 | 1564.480 | 56.848 | 1233.757 | 2.490% | 62.055% |
| 20.0 | 1425.928 | 54.733 | 1288.49 | 2.398% | 64.808% |
| 21.0 | 1309.619 | 52.528 | 1341.018 | 2.301% | 67.450% |
| 22.0 | 1206.799 | 50.568 | 1391.587 | 2.215% | 69.993% |
| 23.0 | 1114.257 | 48.702 | 1440.289 | 2.134% | 72.443% |
| 24.0 | 1015.904 | 46.573 | 1486.862 | 2.040% | 74.785% |
| 25.0 | 934.013 | 44.337 | 1531.199 | 1.942% | 77.015% |
| 26.0 | 861.151 | 42.375 | 1573.574 | 1.856% | 79.147% |
| 27.0 | 800.196 | 40.645 | 1614.219 | 1.781% | 81.191% |
| 28.0 | 748.517 | 39.210 | 1653.429 | 1.718% | 83.163% |
| 29.0 | 695.038 | 37.767 | 1691.197 | 1.655% | 85.063% |
| 30.0 | 636.324 | 35.947 | 1727.143 | 1.575% | 86.871% |
| 31.0 | 567.899 | 33.512 | 1760.655 | 1.468% | 88.556% |
| 32.0 | 478.718 | 29.984 | 1790.639 | 1.314% | 90.064% |
| 33.0 | 390.209 | 25.599 | 1816.238 | 1.121% | 91.352% |
| 34.0 | 320.843 | 21.519 | 1837.757 | .943% | 92.434% |
| 35.0 | 223.715 | 16.912 | 1854.669 | .741% | 93.285% |
| 36.0 | 169.676 | 12.526 | 1867.194 | .549% | 93.915% |
| 37.0 | 110.140 | 9.126 | 1876.32 | .400% | 94.374% |

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 38.0 | 76.133 | 6.218 | 1882.538 | .272% | 94.687% |
| 39.0 | 60.537 | 4.665 | 1887.203 | .204% | 94.921% |
| 40.0 | 56.168 | 4.070 | 1891.273 | .178% | 95.126% |
| 41.0 | 52.232 | 3.860 | 1895.133 | .169% | 95.320% |
| 42.0 | 49.147 | 3.683 | 1898.816 | .161% | 95.505% |
| 43.0 | 46.249 | 3.534 | 1902.35 | .155% | 95.683% |
| 44.0 | 43.739 | 3.396 | 1905.746 | .149% | 95.854% |
| 45.0 | 41.222 | 3.265 | 1909.011 | .143% | 96.018% |
| 46.0 | 38.981 | 3.137 | 1912.148 | .137% | 96.176% |
| 47.0 | 36.972 | 3.021 | 1915.169 | .132% | 96.328% |
| 48.0 | 35.202 | 2.918 | 1918.087 | .128% | 96.475% |
| 49.0 | 33.768 | 2.832 | 1920.919 | .124% | 96.617% |
| 50.0 | 32.401 | 2.759 | 1923.678 | .121% | 96.756% |
| 51.0 | 31.497 | 2.703 | 1926.381 | .118% | 96.892% |
| 52.0 | 30.720 | 2.670 | 1929.051 | .117% | 97.026% |
| 53.0 | 30.205 | 2.650 | 1931.701 | .116% | 97.160% |
| 54.0 | 29.645 | 2.638 | 1934.339 | .116% | 97.292% |
| 55.0 | 29.286 | 2.631 | 1936.97 | .115% | 97.425% |
| 56.0 | 28.599 | 2.616 | 1939.585 | .115% | 97.556% |
| 57.0 | 27.800 | 2.579 | 1942.164 | .113% | 97.686% |
| 58.0 | 26.807 | 2.525 | 1944.689 | .111% | 97.813% |
| 59.0 | 25.709 | 2.455 | 1947.144 | .108% | 97.936% |
| 60.0 | 24.222 | 2.359 | 1949.503 | .103% | 98.055% |
| 61.0 | 22.811 | 2.245 | 1951.748 | .098% | 98.168% |
| 62.0 | 21.272 | 2.124 | 1953.872 | .093% | 98.275% |
| 63.0 | 19.539 | 1.985 | 1955.857 | .087% | 98.374% |
| 64.0 | 18.195 | 1.852 | 1957.708 | .081% | 98.468% |
| 65.0 | 16.477 | 1.716 | 1959.424 | .075% | 98.554% |
| 66.0 | 15.431 | 1.592 | 1961.016 | .070% | 98.634% |
| 67.0 | 14.214 | 1.491 | 1962.507 | .065% | 98.709% |
| 68.0 | 13.392 | 1.398 | 1963.905 | .061% | 98.779% |
| 69.0 | 12.705 | 1.331 | 1965.237 | .058% | 98.846% |
| 70.0 | 12.249 | 1.282 | 1966.518 | .056% | 98.911% |
| 71.0 | 11.906 | 1.248 | 1967.767 | .055% | 98.974% |
| 72.0 | 11.607 | 1.223 | 1968.989 | .054% | 99.035% |
| 73.0 | 11.390 | 1.203 | 1970.192 | .053% | 99.096% |
| 74.0 | 11.174 | 1.186 | 1971.378 | .052% | 99.155% |
| 75.0 | 10.957 | 1.169 | 1972.548 | .051% | 99.214% |

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 76.0 | 10.763 | 1.153 | 1973.701 | .051% | 99.272% |
| 77.0 | 10.569 | 1.137 | 1974.838 | .050% | 99.329% |
| 78.0 | 10.390 | 1.122 | 1975.96 | .049% | 99.386% |
| 79.0 | 10.210 | 1.107 | 1977.067 | .048% | 99.441% |
| 80.0 | 10.024 | 1.091 | 1978.157 | .048% | 99.496% |
| 81.0 | 9.822 | 1.073 | 1979.231 | .047% | 99.550% |
| 82.0 | 9.650 | 1.056 | 1980.287 | .046% | 99.603% |
| 83.0 | 9.456 | 1.039 | 1981.325 | .045% | 99.655% |
| 84.0 | 9.269 | 1.020 | 1982.345 | .045% | 99.707% |
| 85.0 | 9.120 | 1.004 | 1983.349 | .044% | 99.757% |
| 86.0 | 8.963 | 0.988 | 1984.337 | .043% | 99.807% |
| 87.0 | 8.851 | 0.975 | 1985.312 | .043% | 99.856% |
| 88.0 | 8.724 | 0.963 | 1986.275 | .042% | 99.904% |
| 89.0 | 8.657 | 0.953 | 1987.228 | .042% | 99.952% |
| 90.0 | 8.619 | 0.947 | 1988.175 | .041% | 100.000% |

## Zonal flux distribution table



ZONAL LUMEN SUMMARY

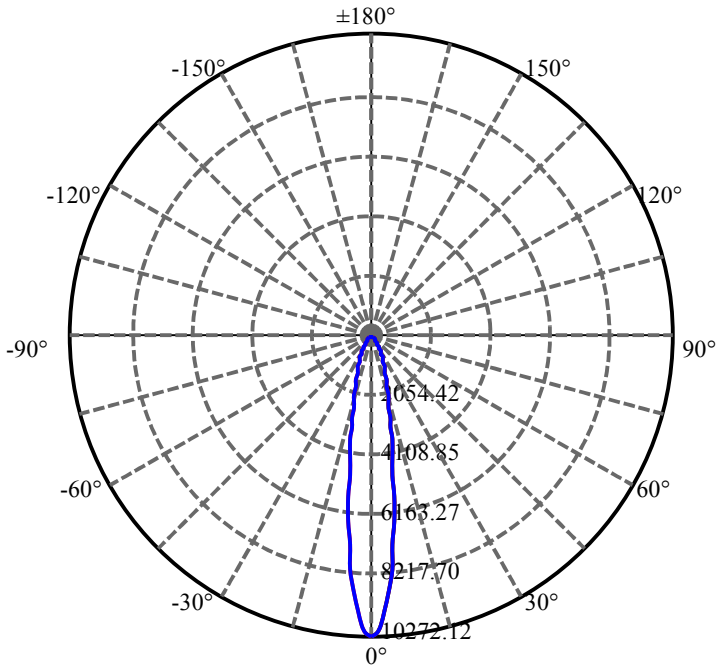
| Zone | Lumens | %Lamp | %Fixt |
|---|---|---|---|
| 0-30 | 1727.14 | 75.66% | 86.87% |
| 0-40 | 1891.27 | 82.85% | 95.13% |
| 0-60 | 1949.50 | 85.40% | 98.05% |
| 0-90 | 1987.23 | 87.06% | 99.95% |
| 0-120 | 1987.23 | 87.06% | 99.95% |
| 0-180 | 1988.17 | 87.10% | 100.00% |
| 60-90 | 40.08 | 1.76% | 2.02% |
| 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% |
| 0-26.42 | 1590.54 | 69.68% | 80.00% |

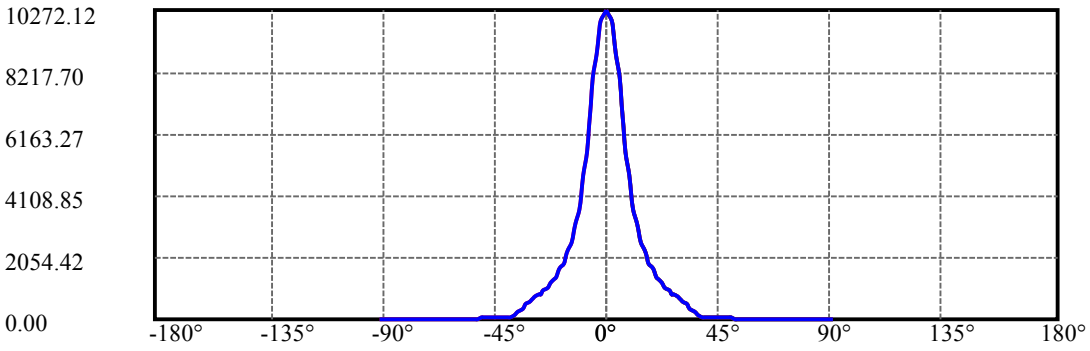
ZONAL LUMEN SUMMARY

| | |
|---|---|
| 0-10 | 632.13 |
| 10-20 | 656.36 |
| 20-30 | 438.65 |
| 30-40 | 164.13 |
| 40-50 | 32.40 |
| 50-60 | 25.83 |
| 60-70 | 17.02 |
| 70-80 | 11.64 |
| 80-90 | 9.07 |
| 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:

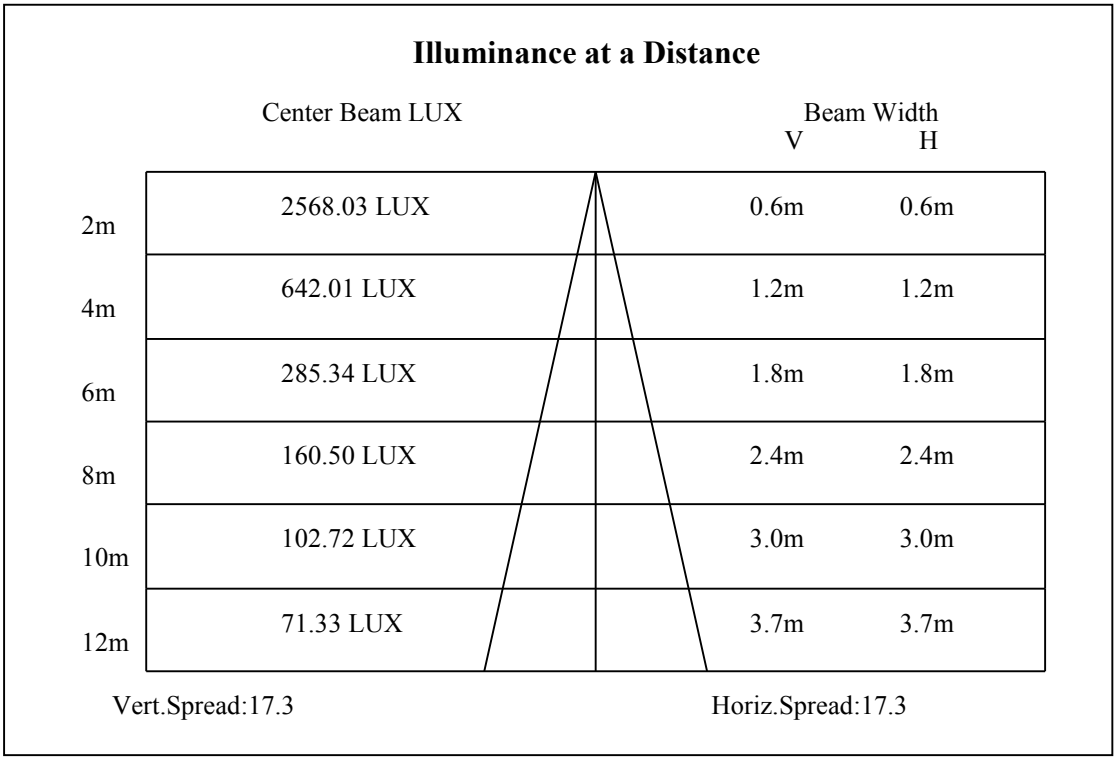
C90/C270:

Field angle(10%Imax):C0/180Left:23.9 Right:23.9
:C90/270Left:23.9 Right:23.9

Beam Angle(50%Imax):C0/180Left:8.6 Right:8.6
:C90/270Left:8.6 Right:8.6

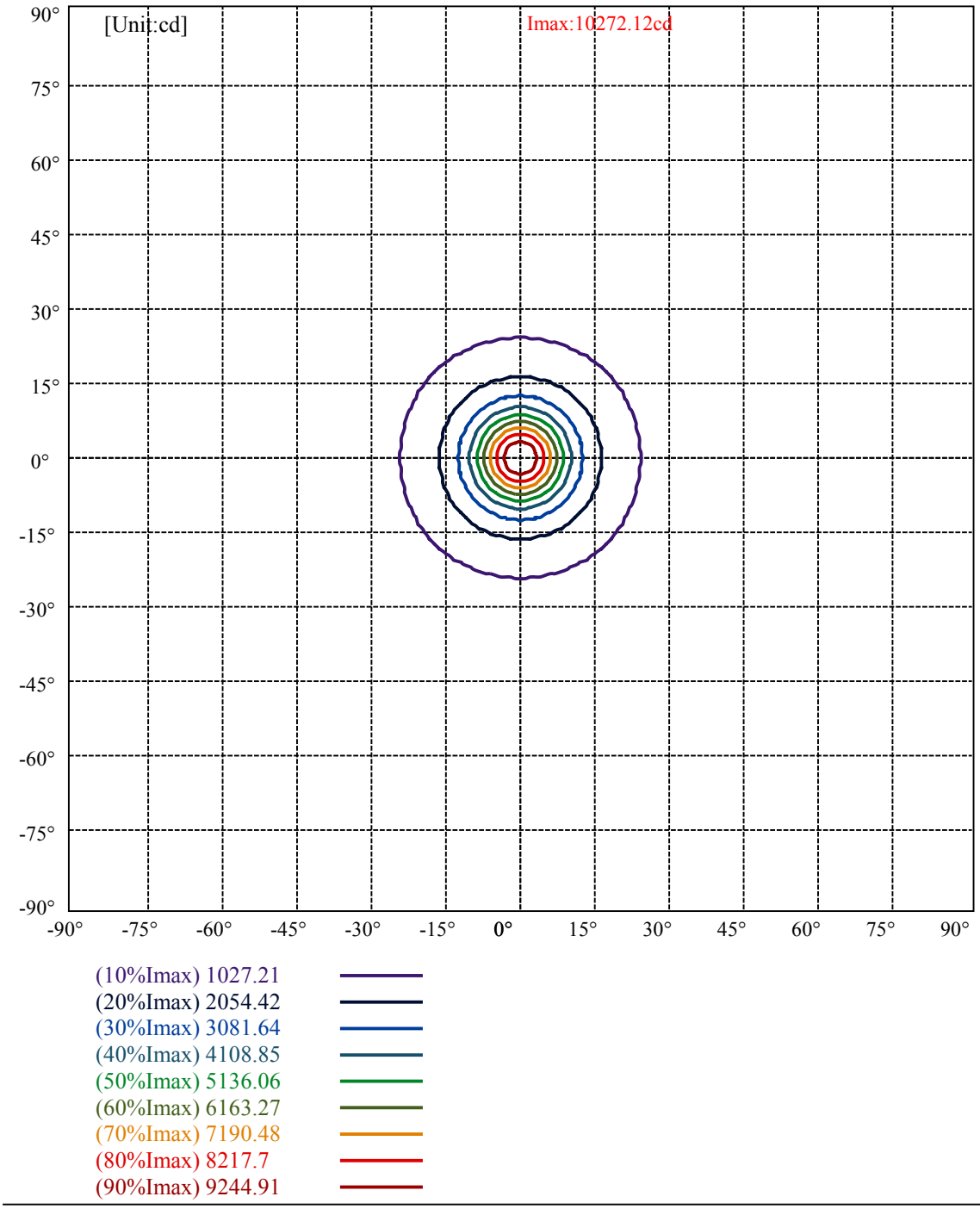
Lux distance Curve





ISO-Intensity(V-H)






(10%Imax) 1027.21
(20%Imax) 2054.42
(30%Imax) 3081.64
(40%Imax) 4108.85
(50%Imax) 5136.06
(60%Imax) 6163.27
(70%Imax) 7190.48
(80%Imax) 8217.7
(90%Imax) 9244.91

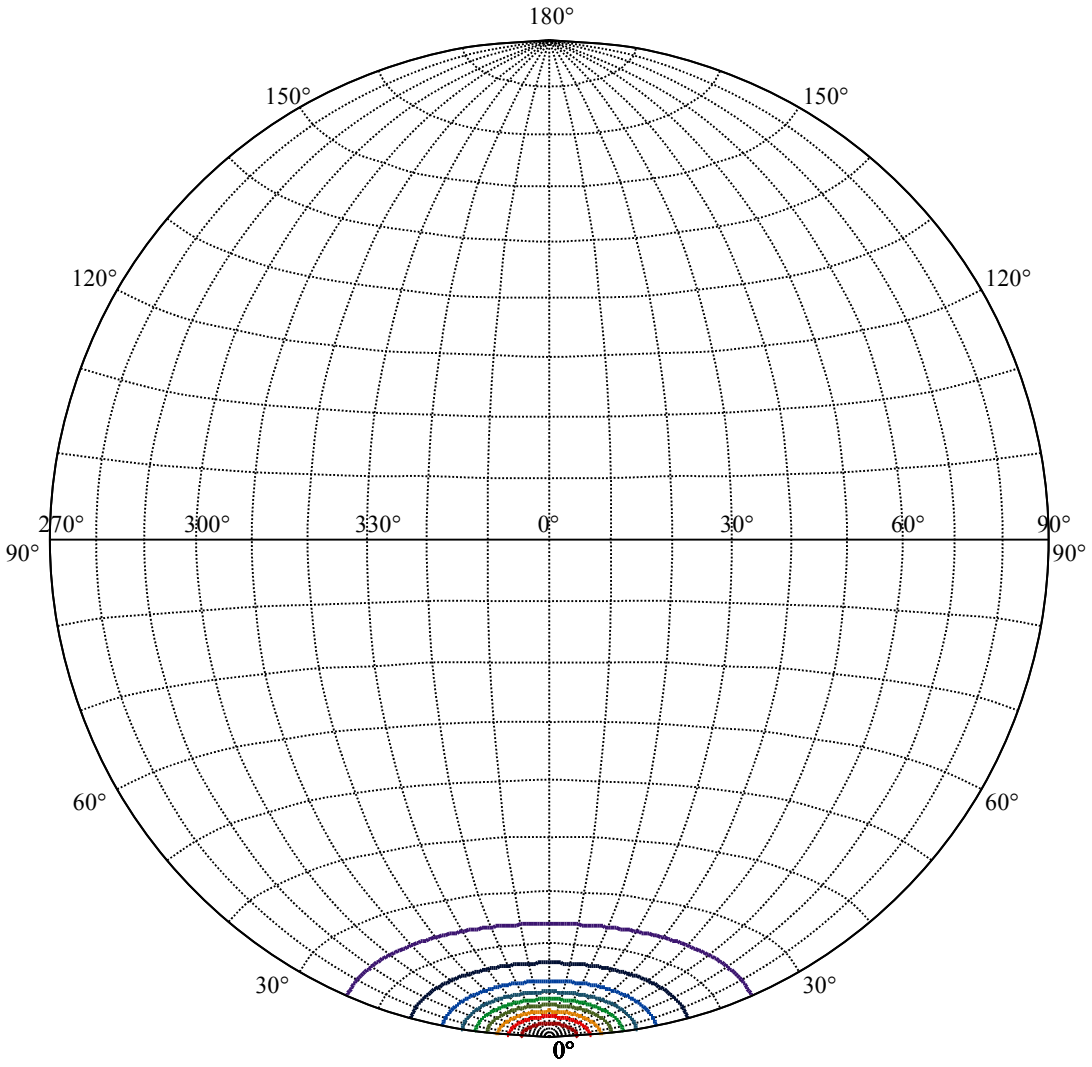
Equipment: GMS1980
Temperature(°C): 25.0

Date: 2022/8/19
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.73

ISO candela diagram on circular web






House [Unit:cd] Road

Imax:10272.12

(10%Imax) 1027.21
(20%Imax) 2054.42
(30%Imax) 3081.64
(40%Imax) 4108.85
(50%Imax) 5136.06
(60%Imax) 6163.27
(70%Imax) 7190.48
(80%Imax) 8217.7
(90%Imax) 9244.91

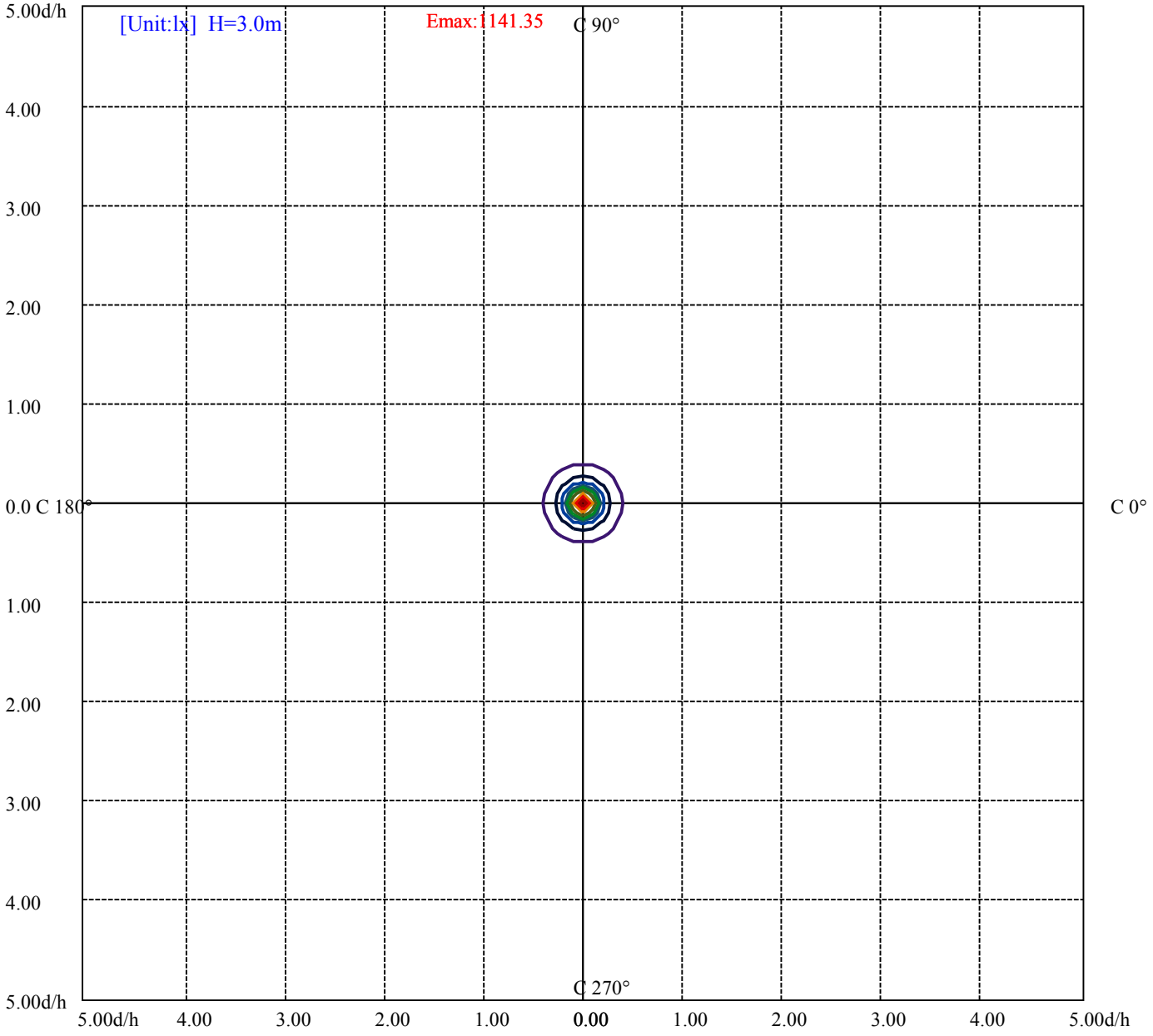
Equipment: GMS1980
Temperature(°C): 25.0

Date: 2022/8/19
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.73

## ISO illuminance diagram





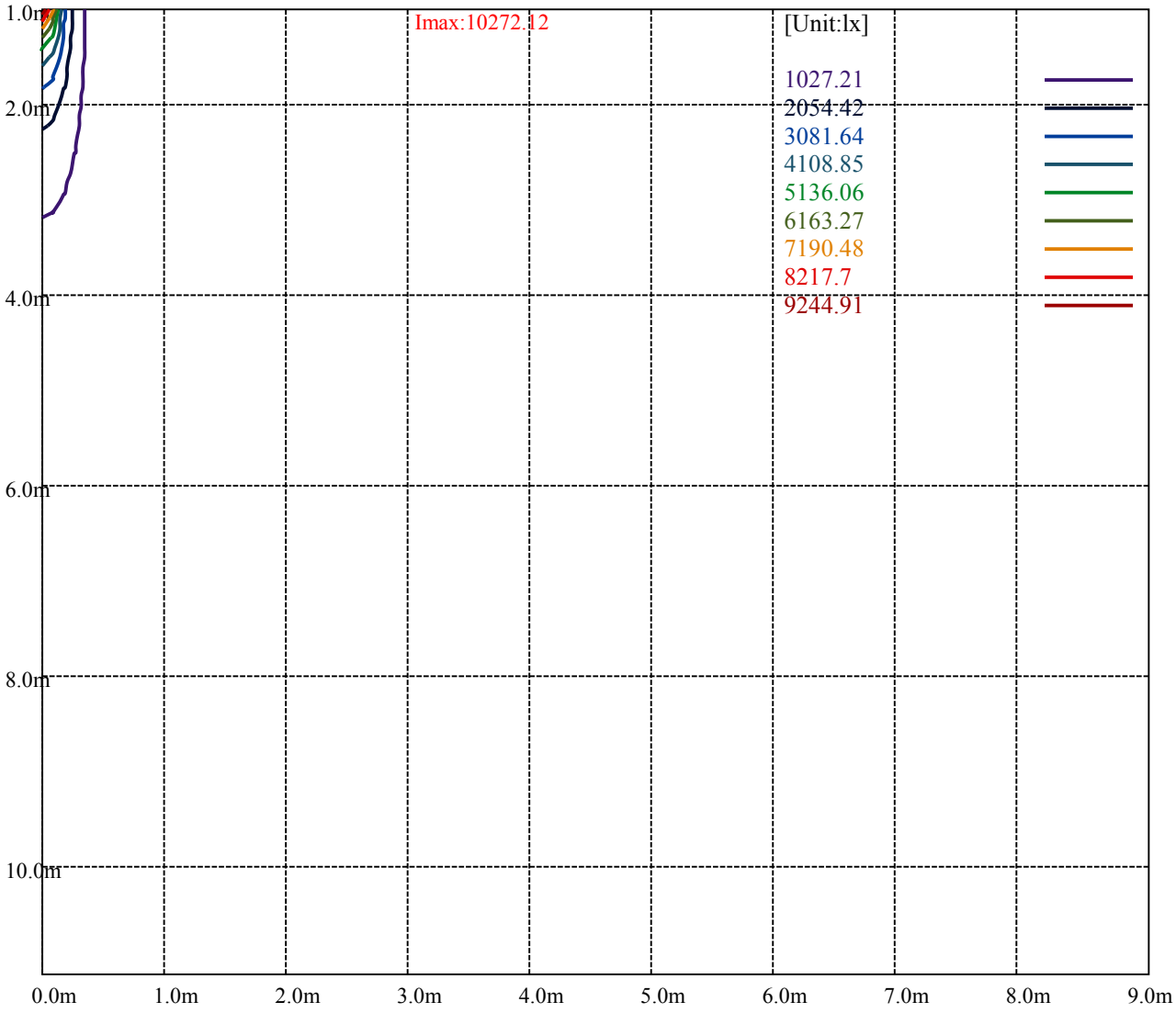

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2022/8/19
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.73

## Space ISO Lux diagram






Equipment: GMS1980
Temperature(°C): 25.0

Date: 2022/8/19
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.73

## Luminance Limitting Curve(no luminous side)



Luminance Table

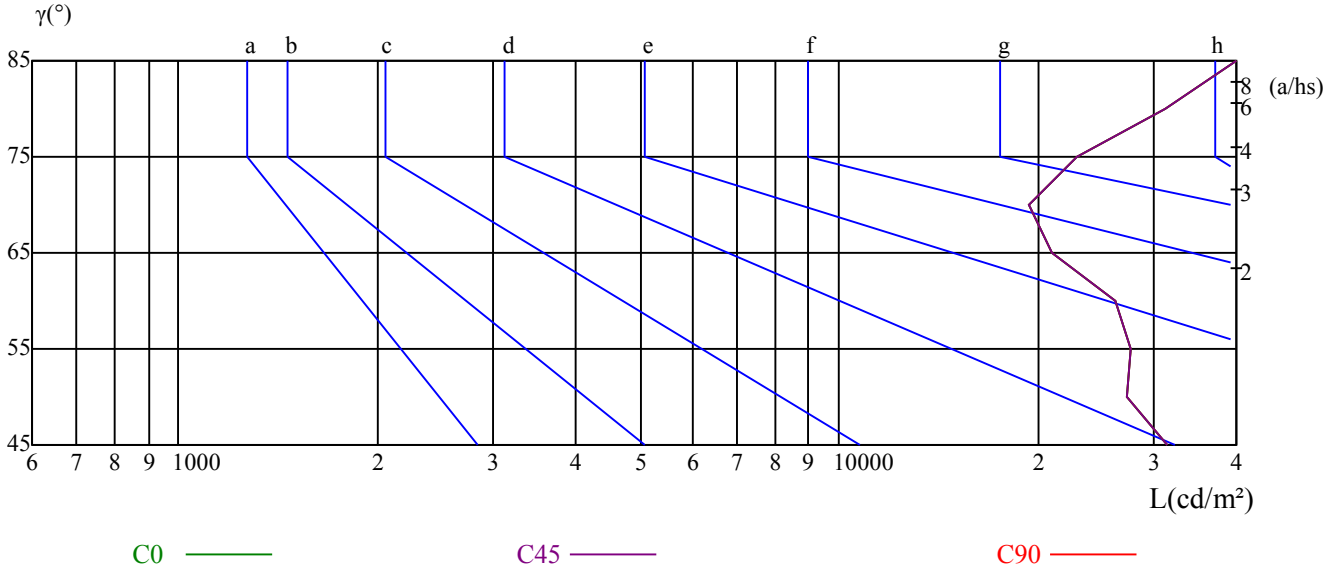
| γ | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 |
|---|---|---|---|---|---|---|---|---|---|
| C0 | 31529 | 27262 | 27615 | 26200 | 21086 | 19370 | 22896 | 31219 | 56592 |
| C45 | 31529 | 27262 | 27615 | 26200 | 21086 | 19370 | 22896 | 31219 | 56592 |
| C90 | 31529 | 27262 | 27615 | 26200 | 21086 | 19370 | 22896 | 31219 | 56592 |

| L(Hor)(65) | L(Ver)(65) | L45(65) | L(Hor)(75) | L(Ver)(75) | L45(75) | L(Hor)(85) | L(Ver)(85) | L45(85) |
|---|---|---|---|---|---|---|---|---|
| 21086 | 21086 | 21086 | 22896 | 22896 | 22896 | 56592 | 56592 | 56592 |

Glare Table

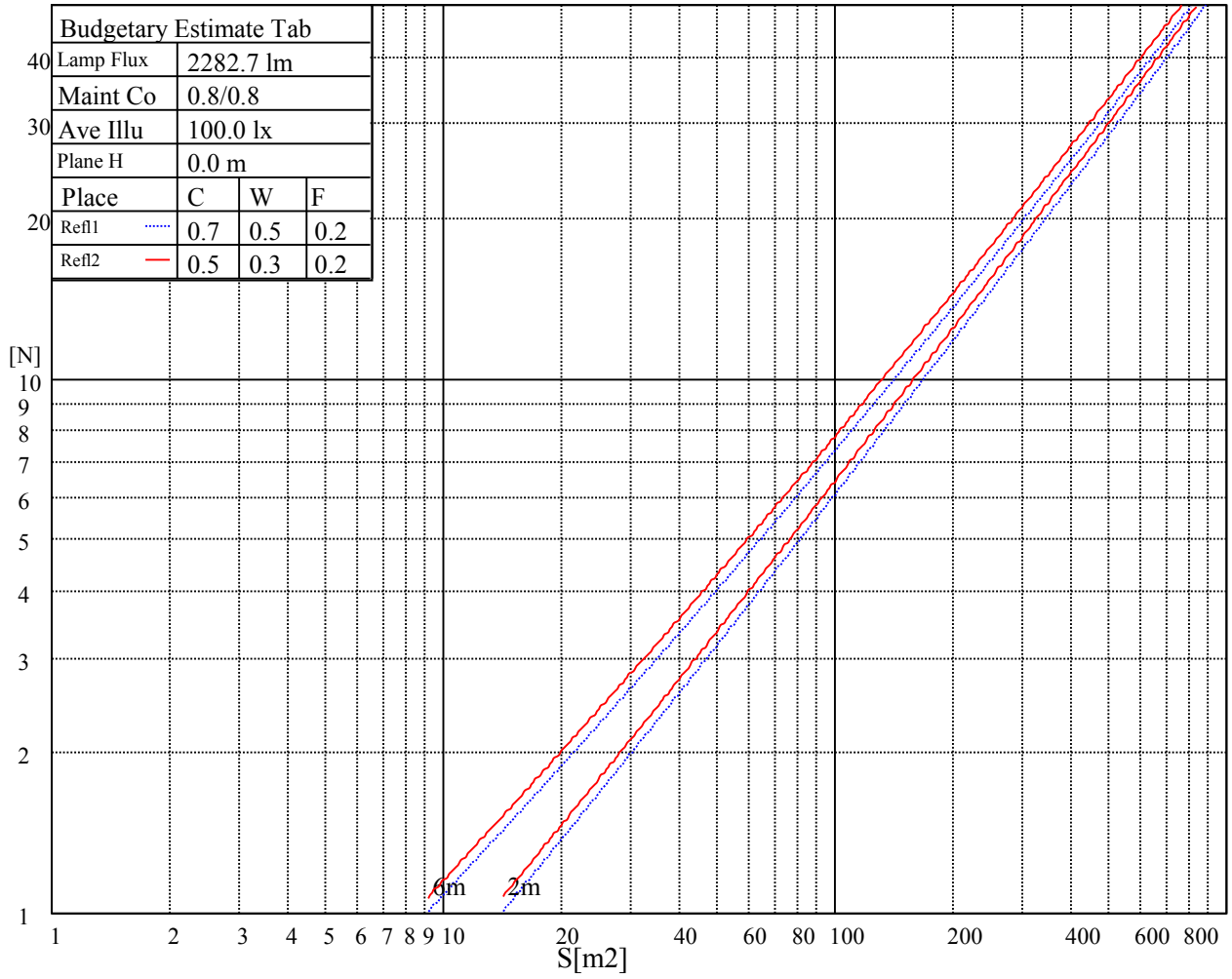
| Glare | Quality | Service Values Illuminance(lx) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1.15 | A | 2000 | 1000 | 500 | <=300 | | | | |
| 1.5 | B | | 2000 | 1000 | 500 | <=300 | | | |
| 1.85 | C | | | 2000 | 1000 | 500 | <=300 | | |
| 2.2 | D | | | | 2000 | 1000 | 500 | <=300 | |
| 2.55 | E | | | | | 2000 | 1000 | 500 | <=300 |
| | | a | b | c | d | e | f | g | h |

Luminance Limitting Curve



## Budgetary Estimate Table






Equipment: GMS1980 Date: 2022/8/19 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.73

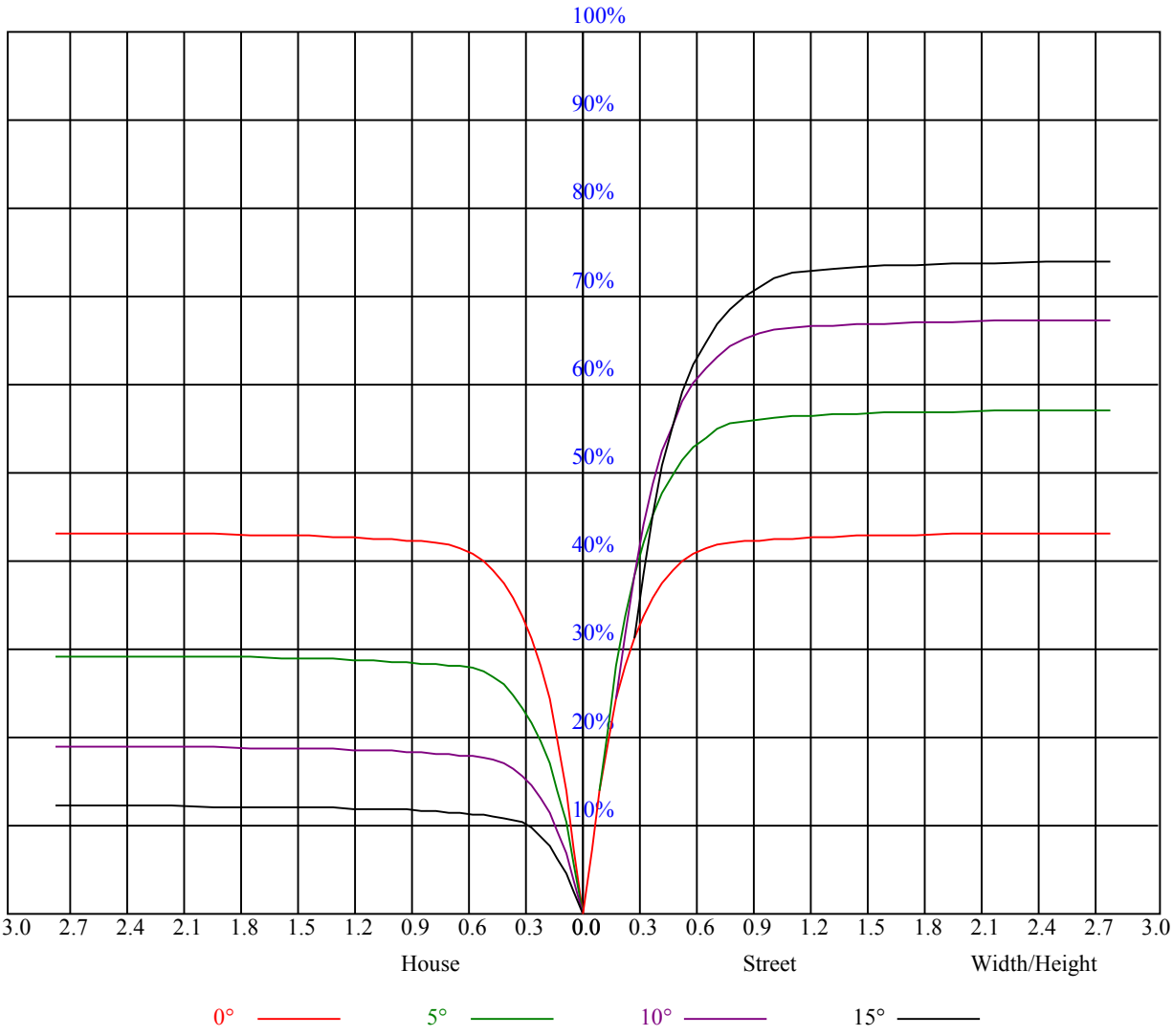
## Utilization factor table for indoor luminaire



| 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 | 1.04 | 1.04 | 1.04 | 1.01 | 1.01 | 1.01 | 0.97 | 0.97 | 0.97 | 0.93 | 0.93 | 0.93 | 0.89 | 0.89 | 0.89 | 0.87 |
| 1 | 0.97 | 0.95 | 0.94 | 0.96 | 0.94 | 0.92 | 0.92 | 0.91 | 0.89 | 0.89 | 0.88 | 0.87 | 0.86 | 0.85 | 0.84 | 0.83 |
| 2 | 0.92 | 0.89 | 0.86 | 0.91 | 0.88 | 0.86 | 0.88 | 0.86 | 0.84 | 0.85 | 0.83 | 0.82 | 0.83 | 0.81 | 0.80 | 0.79 |
| 3 | 0.87 | 0.84 | 0.81 | 0.86 | 0.83 | 0.80 | 0.84 | 0.81 | 0.79 | 0.82 | 0.80 | 0.78 | 0.80 | 0.78 | 0.77 | 0.75 |
| 4 | 0.83 | 0.79 | 0.76 | 0.82 | 0.79 | 0.76 | 0.81 | 0.77 | 0.75 | 0.79 | 0.76 | 0.74 | 0.77 | 0.75 | 0.73 | 0.72 |
| 5 | 0.80 | 0.76 | 0.72 | 0.79 | 0.75 | 0.72 | 0.77 | 0.74 | 0.72 | 0.76 | 0.73 | 0.71 | 0.75 | 0.72 | 0.70 | 0.69 |
| 6 | 0.76 | 0.72 | 0.69 | 0.76 | 0.72 | 0.69 | 0.75 | 0.71 | 0.69 | 0.73 | 0.70 | 0.68 | 0.72 | 0.70 | 0.68 | 0.67 |
| 7 | 0.73 | 0.69 | 0.66 | 0.73 | 0.69 | 0.66 | 0.72 | 0.68 | 0.66 | 0.71 | 0.68 | 0.66 | 0.70 | 0.67 | 0.65 | 0.64 |
| 8 | 0.71 | 0.67 | 0.64 | 0.70 | 0.66 | 0.64 | 0.69 | 0.66 | 0.63 | 0.69 | 0.65 | 0.63 | 0.68 | 0.65 | 0.63 | 0.62 |
| 9 | 0.68 | 0.64 | 0.62 | 0.68 | 0.64 | 0.61 | 0.67 | 0.64 | 0.61 | 0.66 | 0.63 | 0.61 | 0.66 | 0.63 | 0.61 | 0.60 |
| 10 | 0.66 | 0.62 | 0.59 | 0.66 | 0.62 | 0.59 | 0.65 | 0.62 | 0.59 | 0.64 | 0.61 | 0.59 | 0.64 | 0.61 | 0.59 | 0.58 |

## Coefficient Utilization Curve






| | | |
|---|---|---|
| Equipment: GMS1980 | Date: 2022/8/19 | 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 | 10233.88 | 10367.13 | 10316.94 | 10064.18 | 9634.56 | 8959.35 | 8170.01 | 7411.75 | 6528.00 |
| 45.0 | 10322.91 | 10058.21 | 9559.27 | 8882.27 | 8202.28 | 7427.29 | 6409.69 | 5612.59 | 4863.29 |
| 90.0 | 10202.81 | 9845.49 | 9251.54 | 8516.58 | 7768.47 | 6844.69 | 5934.66 | 5155.48 | 4399.01 |
| 135.0 | 10328.89 | 10097.64 | 9555.09 | 8959.35 | 8280.56 | 7413.54 | 6504.10 | 5699.83 | 4878.23 |
| 180.0 | 10233.88 | 9895.08 | 9401.52 | 8627.12 | 7897.54 | 7122.55 | 6096.59 | 5310.24 | 4594.40 |
| 225.0 | 10322.91 | 10383.26 | 10253.00 | 9910.02 | 9338.18 | 8702.41 | 7912.48 | 7035.90 | 6232.23 |
| 270.0 | 10202.81 | 10347.41 | 10348.60 | 10134.09 | 9801.27 | 9115.30 | 8365.41 | 7708.72 | 6738.93 |
| 315.0 | 10328.89 | 10383.86 | 10240.45 | 9859.83 | 9365.67 | 8662.98 | 7841.97 | 7095.66 | 6205.94 |
| 360.0 | 10233.88 | 10367.13 | 10316.94 | 10064.18 | 9634.56 | 8959.35 | 8170.01 | 7411.75 | 6528.00 |

| C/γ(°) | 9.0 | 10.0 | 11.0 | 12.0 | 13.0 | 14.0 | 15.0 | 16.0 | 17.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 5634.10 | 4912.88 | 4202.42 | 3702.29 | 3247.57 | 2871.72 | 2587.30 | 2345.30 | 2080.00 |
| 45.0 | 4094.27 | 3605.49 | 3202.76 | 2841.25 | 2532.93 | 2304.67 | 2074.02 | 1888.79 | 1723.27 |
| 90.0 | 3858.24 | 3374.25 | 2985.85 | 2688.88 | 2406.85 | 2166.64 | 1981.41 | 1815.89 | 1628.27 |
| 135.0 | 4182.11 | 3677.79 | 3220.68 | 2889.65 | 2576.55 | 2313.63 | 2109.28 | 1947.35 | 1732.83 |
| 180.0 | 3943.09 | 3439.97 | 3071.90 | 2728.32 | 2468.99 | 2221.02 | 2004.11 | 1835.01 | 1665.31 |
| 225.0 | 5451.26 | 4569.30 | 3987.91 | 3514.07 | 3087.43 | 2730.71 | 2468.39 | 2183.97 | 1989.77 |
| 270.0 | 5847.42 | 5203.28 | 4372.12 | 3846.89 | 3408.31 | 2957.17 | 2656.02 | 2389.52 | 2108.68 |
| 315.0 | 5428.55 | 4642.20 | 3990.90 | 3521.24 | 3133.44 | 2767.75 | 2461.22 | 2229.98 | 2002.92 |
| 360.0 | 5634.10 | 4912.88 | 4202.42 | 3702.29 | 3247.57 | 2871.72 | 2587.30 | 2345.30 | 2080.00 |

| C/γ(°) | 18.0 | 19.0 | 20.0 | 21.0 | 22.0 | 23.0 | 24.0 | 25.0 | 26.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 1899.54 | 1742.99 | 1572.70 | 1452.59 | 1348.03 | 1241.67 | 1140.68 | 1055.24 | 957.24 |
| 45.0 | 1567.92 | 1447.22 | 1318.75 | 1217.76 | 1121.56 | 1031.93 | 924.97 | 853.27 | 799.49 |
| 90.0 | 1499.80 | 1385.67 | 1257.80 | 1159.51 | 1070.53 | 980.84 | 887.63 | 817.36 | 773.20 |
| 135.0 | 1594.21 | 1487.25 | 1329.50 | 1232.10 | 1152.63 | 1039.70 | 939.91 | 868.81 | 798.30 |
| 180.0 | 1520.11 | 1403.60 | 1302.02 | 1179.10 | 1092.64 | 1004.69 | 898.68 | 829.67 | 780.07 |
| 225.0 | 1817.09 | 1636.03 | 1524.89 | 1395.83 | 1256.60 | 1187.05 | 1101.54 | 991.90 | 906.99 |
| 270.0 | 1918.07 | 1752.55 | 1575.68 | 1453.19 | 1349.82 | 1239.28 | 1140.68 | 1056.43 | 960.83 |
| 315.0 | 1807.53 | 1660.53 | 1526.09 | 1386.86 | 1262.58 | 1188.90 | 1093.12 | 999.43 | 913.08 |
| 360.0 | 1899.54 | 1742.99 | 1572.70 | 1452.59 | 1348.03 | 1241.67 | 1140.68 | 1055.24 | 957.24 |

| C/γ(°) | 27.0 | 28.0 | 29.0 | 30.0 | 31.0 | 32.0 | 33.0 | 34.0 | 35.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 872.99 | 805.47 | 757.67 | 726.60 | 674.61 | 598.72 | 516.86 | 442.77 | 327.45 |
| 45.0 | 755.28 | 713.45 | 656.68 | 576.62 | 485.19 | 397.95 | 304.74 | 255.44 | 150.34 |
| 90.0 | 732.51 | 681.54 | 611.93 | 521.58 | 439.00 | 345.31 | 258.91 | 186.55 | 117.18 |
| 135.0 | 758.86 | 723.61 | 655.49 | 584.38 | 506.11 | 401.54 | 309.52 | 267.16 | 147.17 |
| 180.0 | 732.63 | 694.87 | 632.13 | 537.84 | 462.01 | 365.99 | 266.98 | 199.93 | 134.92 |
| 225.0 | 838.27 | 777.09 | 740.16 | 706.28 | 646.05 | 550.14 | 465.53 | 382.90 | 279.17 |
| 270.0 | 876.58 | 811.44 | 763.64 | 732.57 | 681.18 | 602.91 | 524.63 | 441.57 | 338.80 |
| 315.0 | 834.45 | 780.67 | 742.61 | 704.73 | 649.04 | 567.17 | 474.50 | 390.43 | 294.70 |
| 360.0 | 872.99 | 805.47 | 757.67 | 726.60 | 674.61 | 598.72 | 516.86 | 442.77 | 327.45 |

| C/γ(°) | 36.0 | 37.0 | 38.0 | 39.0 | 40.0 | 41.0 | 42.0 | 43.0 | 44.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 303.54 | 163.36 | 91.30 | 65.37 | 59.45 | 54.14 | 50.85 | 48.40 | 45.65 |
| 45.0 | 93.15 | 65.61 | 60.17 | 55.33 | 51.81 | 49.06 | 46.43 | 43.32 | 41.29 |
| 90.0 | 75.23 | 64.83 | 60.59 | 55.51 | 52.94 | 49.83 | 46.85 | 44.04 | 41.59 |
| 135.0 | 94.11 | 70.81 | 61.61 | 57.96 | 54.55 | 51.39 | 48.04 | 45.05 | 42.42 |
| 180.0 | 79.17 | 65.85 | 60.77 | 54.97 | 52.58 | 49.48 | 46.37 | 43.32 | 41.05 |
| 225.0 | 201.19 | 133.67 | 81.32 | 63.64 | 58.86 | 54.08 | 51.63 | 48.28 | 45.59 |
| 270.0 | 305.93 | 181.65 | 109.53 | 70.03 | 61.78 | 56.35 | 52.52 | 50.13 | 47.26 |
| 315.0 | 205.07 | 135.34 | 83.77 | 61.49 | 57.36 | 53.54 | 50.49 | 47.44 | 45.05 |
| 360.0 | 303.54 | 163.36 | 91.30 | 65.37 | 59.45 | 54.14 | 50.85 | 48.40 | 45.65 |

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 | 42.84 | 40.51 | 38.12 | 36.39 | 34.42 | 32.92 | 31.85 | 30.83 | 30.18 |
| 45.0 | 38.90 | 36.63 | 35.07 | 33.64 | 32.21 | 31.13 | 30.41 | 30.00 | 29.64 |
| 90.0 | 39.44 | 37.05 | 35.49 | 33.88 | 32.98 | 31.67 | 31.01 | 30.53 | 30.29 |
| 135.0 | 40.09 | 38.06 | 36.09 | 34.42 | 32.92 | 31.97 | 31.19 | 30.59 | 29.88 |
| 180.0 | 38.72 | 36.57 | 34.96 | 33.22 | 32.27 | 31.19 | 30.47 | 29.76 | 29.46 |
| 225.0 | 43.20 | 40.87 | 38.60 | 36.51 | 35.13 | 33.34 | 32.39 | 31.31 | 30.77 |
| 270.0 | 44.52 | 42.07 | 39.50 | 37.82 | 35.85 | 34.24 | 32.98 | 31.97 | 31.07 |
| 315.0 | 42.07 | 40.09 | 37.94 | 35.73 | 34.36 | 32.74 | 31.67 | 30.77 | 30.35 |
| 360.0 | 42.84 | 40.51 | 38.12 | 36.39 | 34.42 | 32.92 | 31.85 | 30.83 | 30.18 |

| C/γ(°) | 54.0 | 55.0 | 56.0 | 57.0 | 58.0 | 59.0 | 60.0 | 61.0 | 62.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 29.40 | 29.22 | 28.74 | 28.44 | 27.61 | 26.59 | 25.57 | 24.14 | 22.77 |
| 45.0 | 29.28 | 28.62 | 28.14 | 27.37 | 26.05 | 24.74 | 23.30 | 21.45 | 20.14 |
| 90.0 | 29.52 | 29.10 | 28.20 | 27.07 | 25.57 | 24.56 | 22.35 | 21.03 | 19.36 |
| 135.0 | 29.76 | 29.34 | 28.68 | 27.43 | 26.47 | 24.98 | 23.48 | 21.87 | 20.08 |
| 180.0 | 29.04 | 28.68 | 27.61 | 26.53 | 25.39 | 24.26 | 22.65 | 20.91 | 19.54 |
| 225.0 | 30.12 | 29.82 | 28.92 | 28.56 | 27.79 | 26.89 | 25.51 | 24.50 | 22.53 |
| 270.0 | 30.47 | 30.18 | 29.76 | 28.98 | 28.44 | 27.31 | 26.23 | 24.86 | 23.72 |
| 315.0 | 29.58 | 29.34 | 28.74 | 28.02 | 27.13 | 26.35 | 24.68 | 23.72 | 22.05 |
| 360.0 | 29.40 | 29.22 | 28.74 | 28.44 | 27.61 | 26.59 | 25.57 | 24.14 | 22.77 |

| C/γ(°) | 63.0 | 64.0 | 65.0 | 66.0 | 67.0 | 68.0 | 69.0 | 70.0 | 71.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 20.97 | 19.66 | 17.69 | 16.79 | 15.12 | 14.04 | 13.09 | 12.49 | 12.01 |
| 45.0 | 18.40 | 16.79 | 15.12 | 14.46 | 13.27 | 12.61 | 12.25 | 11.77 | 11.53 |
| 90.0 | 17.63 | 16.43 | 15.00 | 13.98 | 13.21 | 12.73 | 12.25 | 12.01 | 11.83 |
| 135.0 | 18.52 | 16.97 | 15.54 | 14.52 | 13.68 | 12.91 | 12.49 | 12.13 | 11.83 |
| 180.0 | 17.75 | 16.67 | 15.12 | 14.22 | 13.27 | 12.73 | 12.31 | 11.95 | 11.71 |
| 225.0 | 21.15 | 19.72 | 17.81 | 16.67 | 15.12 | 14.04 | 13.09 | 12.61 | 12.13 |
| 270.0 | 21.57 | 20.32 | 18.34 | 17.21 | 15.60 | 14.52 | 13.56 | 12.85 | 12.37 |
| 315.0 | 20.32 | 19.00 | 17.21 | 15.60 | 14.46 | 13.56 | 12.61 | 12.19 | 11.83 |
| 360.0 | 20.97 | 19.66 | 17.69 | 16.79 | 15.12 | 14.04 | 13.09 | 12.49 | 12.01 |

| C/γ(°) | 72.0 | 73.0 | 74.0 | 75.0 | 76.0 | 77.0 | 78.0 | 79.0 | 80.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 11.71 | 11.47 | 11.23 | 10.99 | 10.88 | 10.64 | 10.52 | 10.34 | 10.10 |
| 45.0 | 11.35 | 11.11 | 10.88 | 10.76 | 10.52 | 10.34 | 10.16 | 9.98 | 9.80 |
| 90.0 | 11.47 | 11.29 | 11.11 | 10.88 | 10.70 | 10.52 | 10.28 | 10.10 | 9.92 |
| 135.0 | 11.59 | 11.35 | 11.11 | 10.88 | 10.70 | 10.46 | 10.28 | 10.10 | 9.92 |
| 180.0 | 11.35 | 11.17 | 10.93 | 10.76 | 10.52 | 10.34 | 10.16 | 9.98 | 9.80 |
| 225.0 | 11.83 | 11.59 | 11.35 | 11.17 | 10.93 | 10.76 | 10.58 | 10.40 | 10.16 |
| 270.0 | 12.01 | 11.77 | 11.59 | 11.29 | 11.11 | 10.93 | 10.76 | 10.58 | 10.46 |
| 315.0 | 11.53 | 11.35 | 11.17 | 10.93 | 10.76 | 10.58 | 10.40 | 10.22 | 10.04 |
| 360.0 | 11.71 | 11.47 | 11.23 | 10.99 | 10.88 | 10.64 | 10.52 | 10.34 | 10.10 |

| C/γ(°) | 81.0 | 82.0 | 83.0 | 84.0 | 85.0 | 86.0 | 87.0 | 88.0 | 89.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 9.98 | 9.80 | 9.62 | 9.44 | 9.32 | 9.14 | 9.02 | 8.84 | 8.72 |
| 45.0 | 9.62 | 9.44 | 9.26 | 9.08 | 8.96 | 8.84 | 8.72 | 8.60 | 8.54 |
| 90.0 | 9.68 | 9.50 | 9.26 | 9.02 | 8.90 | 8.78 | 8.66 | 8.60 | 8.60 |
| 135.0 | 9.62 | 9.50 | 9.32 | 9.14 | 8.96 | 8.84 | 8.78 | 8.66 | 8.60 |
| 180.0 | 9.56 | 9.38 | 9.26 | 9.08 | 8.90 | 8.78 | 8.66 | 8.60 | 8.60 |
| 225.0 | 9.98 | 9.80 | 9.56 | 9.38 | 9.26 | 9.08 | 8.96 | 8.84 | 8.72 |
| 270.0 | 10.22 | 10.04 | 9.80 | 9.62 | 9.44 | 9.14 | 9.02 | 8.84 | 8.78 |
| 315.0 | 9.92 | 9.74 | 9.56 | 9.38 | 9.20 | 9.08 | 8.96 | 8.78 | 8.66 |
| 360.0 | 9.98 | 9.80 | 9.62 | 9.44 | 9.32 | 9.14 | 9.02 | 8.84 | 8.72 |

Intensity data(cd)



| C/γ(°) | 90.0 |
|---|---|
| 0.0 | 8.66 |
| 45.0 | 8.54 |
| 90.0 | 8.60 |
| 135.0 | 8.60 |
| 180.0 | 8.60 |
| 225.0 | 8.66 |
| 270.0 | 8.66 |
| 315.0 | 8.60 |
| 360.0 | 8.66 |