NATA LIGHTING CO.,LTD.
www.nata.cn
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Tel:+86-750-3770000 Fax:+86-750-3771111
Address:380JinOu Road,GaoXin Zone,Jiang Men City,Guangdong,China

## NATA

Client:
LumCAT: 2-1317-E
Luminaire: 99.02.73.171

| | |
|---|---|
| Report No: nt0100 | Voltage(V): 34.0700 |
| Test No: GC2019122621 | Current(A): 0.2970 |
| LampCAT: LUMINUS CXM-9-AC40 | Power (W): 10.1100 |
| Lamp flux(lm): 1106.0 | PF: 1.0000 |
| Number of Lamps: 1 | Ballast type: DC |
| Length(mm): 0 | Width(mm): 0 |
| Phm Type: C | Height(mm): 0 |

## Photometric Results

Lumens(lm): 988.28, Efficiency(%): 89.36% , Luminous Efficacy(lm/W): 97.75
Central intensity(cd): 3164.484, Maximum intensity(cd): 3164.484
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=22.8
[C90/270]Total=22.8
Field angle(10%Imax): [C0/180]Total=62.8
[C90/270]Total=62.8
Maximum s/h(1/2): C0_180=0.38 C90_270=0.38
Maximum s/h(1/4): C0_180=0.50 C90_270=0.50
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 89.36%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.474%

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 0.0 | 3164.484 | 0.000 | 0 | .000% | .000% |
| 1.0 | 3141.352 | 3.017 | 3.017 | .273% | .305% |
| 2.0 | 3076.594 | 8.925 | 11.942 | .807% | 1.208% |
| 3.0 | 2968.734 | 14.458 | 26.4 | 1.307% | 2.671% |
| 4.0 | 2831.836 | 19.416 | 45.817 | 1.756% | 4.636% |
| 5.0 | 2669.836 | 23.668 | 69.485 | 2.140% | 7.031% |
| 6.0 | 2484.773 | 27.089 | 96.573 | 2.449% | 9.772% |
| 7.0 | 2287.828 | 29.623 | 126.197 | 2.678% | 12.769% |
| 8.0 | 2106.070 | 31.446 | 157.643 | 2.843% | 15.951% |
| 9.0 | 1929.867 | 32.709 | 190.352 | 2.957% | 19.261% |
| 10.0 | 1759.852 | 33.391 | 223.743 | 3.019% | 22.640% |
| 11.0 | 1630.526 | 33.877 | 257.62 | 3.063% | 26.067% |
| 12.0 | 1508.899 | 34.318 | 291.938 | 3.103% | 29.540% |
| 13.0 | 1387.484 | 34.373 | 326.311 | 3.108% | 33.018% |
| 14.0 | 1305.049 | 34.464 | 360.775 | 3.116% | 36.505% |
| 15.0 | 1224.689 | 34.729 | 395.504 | 3.140% | 40.019% |
| 16.0 | 1152.387 | 34.831 | 430.335 | 3.149% | 43.544% |
| 17.0 | 1084.289 | 34.831 | 465.166 | 3.149% | 47.068% |
| 18.0 | 1021.402 | 34.718 | 499.884 | 3.139% | 50.581% |
| 19.0 | 961.566 | 34.500 | 534.384 | 3.119% | 54.072% |
| 20.0 | 900.675 | 34.084 | 568.468 | 3.082% | 57.521% |
| 21.0 | 839.496 | 33.415 | 601.883 | 3.021% | 60.902% |
| 22.0 | 781.080 | 32.566 | 634.449 | 2.945% | 64.197% |
| 23.0 | 721.083 | 31.519 | 665.969 | 2.850% | 67.387% |
| 24.0 | 661.620 | 30.231 | 696.199 | 2.733% | 70.446% |
| 25.0 | 609.237 | 28.896 | 725.096 | 2.613% | 73.369% |
| 26.0 | 557.606 | 27.543 | 752.639 | 2.490% | 76.156% |
| 27.0 | 507.403 | 26.056 | 778.695 | 2.356% | 78.793% |
| 28.0 | 462.319 | 24.551 | 803.246 | 2.220% | 81.277% |
| 29.0 | 418.120 | 23.035 | 826.281 | 2.083% | 83.608% |
| 30.0 | 377.304 | 21.476 | 847.758 | 1.942% | 85.781% |
| 31.0 | 336.565 | 19.866 | 867.623 | 1.796% | 87.791% |
| 32.0 | 291.713 | 17.999 | 885.623 | 1.627% | 89.612% |
| 33.0 | 250.896 | 15.985 | 901.608 | 1.445% | 91.230% |
| 34.0 | 216.541 | 14.146 | 915.754 | 1.279% | 92.661% |
| 35.0 | 171.499 | 12.051 | 927.805 | 1.090% | 93.881% |
| 36.0 | 134.571 | 9.745 | 937.551 | .881% | 94.867% |
| 37.0 | 104.273 | 7.790 | 945.341 | .704% | 95.655% |

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 38.0 | 75.087 | 5.987 | 951.327 | .541% | 96.261% |
| 39.0 | 51.891 | 4.334 | 955.661 | .392% | 96.699% |
| 40.0 | 36.155 | 3.071 | 958.732 | .278% | 97.010% |
| 41.0 | 25.179 | 2.184 | 960.916 | .197% | 97.231% |
| 42.0 | 15.476 | 1.477 | 962.393 | .134% | 97.381% |
| 43.0 | 11.595 | 1.003 | 963.396 | .091% | 97.482% |
| 44.0 | 10.027 | 0.816 | 964.212 | .074% | 97.565% |
| 45.0 | 8.620 | 0.717 | 964.929 | .065% | 97.637% |
| 46.0 | 7.875 | 0.645 | 965.574 | .058% | 97.702% |
| 47.0 | 7.488 | 0.611 | 966.185 | .055% | 97.764% |
| 48.0 | 7.228 | 0.595 | 966.78 | .054% | 97.824% |
| 49.0 | 6.982 | 0.584 | 967.363 | .053% | 97.883% |
| 50.0 | 6.729 | 0.572 | 967.935 | .052% | 97.941% |
| 51.0 | 6.504 | 0.560 | 968.495 | .051% | 97.998% |
| 52.0 | 6.293 | 0.549 | 969.044 | .050% | 98.054% |
| 53.0 | 6.103 | 0.539 | 969.583 | .049% | 98.108% |
| 54.0 | 5.955 | 0.531 | 970.115 | .048% | 98.162% |
| 55.0 | 5.815 | 0.525 | 970.64 | .048% | 98.215% |
| 56.0 | 5.681 | 0.519 | 971.16 | .047% | 98.268% |
| 57.0 | 5.569 | 0.514 | 971.674 | .047% | 98.320% |
| 58.0 | 5.498 | 0.512 | 972.186 | .046% | 98.371% |
| 59.0 | 5.414 | 0.510 | 972.696 | .046% | 98.423% |
| 60.0 | 5.337 | 0.508 | 973.204 | .046% | 98.474% |
| 61.0 | 5.288 | 0.507 | 973.711 | .046% | 98.526% |
| 62.0 | 5.224 | 0.507 | 974.217 | .046% | 98.577% |
| 63.0 | 5.175 | 0.506 | 974.723 | .046% | 98.628% |
| 64.0 | 5.126 | 0.505 | 975.229 | .046% | 98.679% |
| 65.0 | 5.084 | 0.505 | 975.734 | .046% | 98.730% |
| 66.0 | 5.041 | 0.505 | 976.239 | .046% | 98.782% |
| 67.0 | 5.027 | 0.506 | 976.745 | .046% | 98.833% |
| 68.0 | 4.985 | 0.507 | 977.252 | .046% | 98.884% |
| 69.0 | 4.957 | 0.507 | 977.76 | .046% | 98.935% |
| 70.0 | 4.929 | 0.508 | 978.267 | .046% | 98.987% |
| 71.0 | 4.901 | 0.508 | 978.775 | .046% | 99.038% |
| 72.0 | 4.880 | 0.509 | 979.284 | .046% | 99.090% |
| 73.0 | 4.852 | 0.509 | 979.793 | .046% | 99.141% |
| 74.0 | 4.816 | 0.508 | 980.301 | .046% | 99.193% |
| 75.0 | 4.795 | 0.508 | 980.809 | .046% | 99.244% |

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 76.0 | 4.774 | 0.508 | 981.317 | .046% | 99.295% |
| 77.0 | 4.746 | 0.508 | 981.825 | .046% | 99.347% |
| 78.0 | 4.725 | 0.507 | 982.331 | .046% | 99.398% |
| 79.0 | 4.704 | 0.507 | 982.838 | .046% | 99.449% |
| 80.0 | 4.676 | 0.506 | 983.344 | .046% | 99.500% |
| 81.0 | 4.634 | 0.503 | 983.847 | .046% | 99.551% |
| 82.0 | 4.634 | 0.503 | 984.35 | .045% | 99.602% |
| 83.0 | 4.591 | 0.501 | 984.851 | .045% | 99.653% |
| 84.0 | 4.570 | 0.499 | 985.35 | .045% | 99.703% |
| 85.0 | 4.535 | 0.497 | 985.847 | .045% | 99.754% |
| 86.0 | 4.493 | 0.493 | 986.341 | .045% | 99.804% |
| 87.0 | 4.444 | 0.489 | 986.83 | .044% | 99.853% |
| 88.0 | 4.423 | 0.486 | 987.316 | .044% | 99.902% |
| 89.0 | 4.402 | 0.484 | 987.799 | .044% | 99.951% |
| 90.0 | 4.380 | 0.482 | 988.281 | .044% | 100.000% |

## Zonal flux distribution table



ZONAL LUMEN SUMMARY

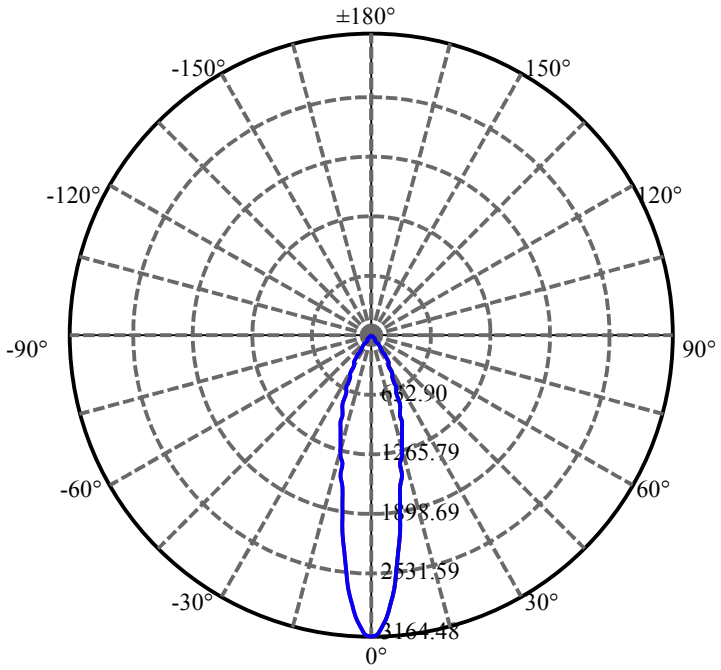
| Zone | Lumens | %Lamp | %Fixt |
|---|---|---|---|
| 0-30 | 847.76 | 76.65% | 85.78% |
| 0-40 | 958.73 | 86.68% | 97.01% |
| 0-60 | 973.20 | 87.99% | 98.47% |
| 0-90 | 987.80 | 89.31% | 99.95% |
| 0-120 | 987.80 | 89.31% | 99.95% |
| 0-180 | 988.28 | 89.36% | 100.00% |
| 60-90 | 15.10 | 1.37% | 1.53% |
| 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% |
| 0-27.49 | 790.62 | 71.49% | 80.00% |

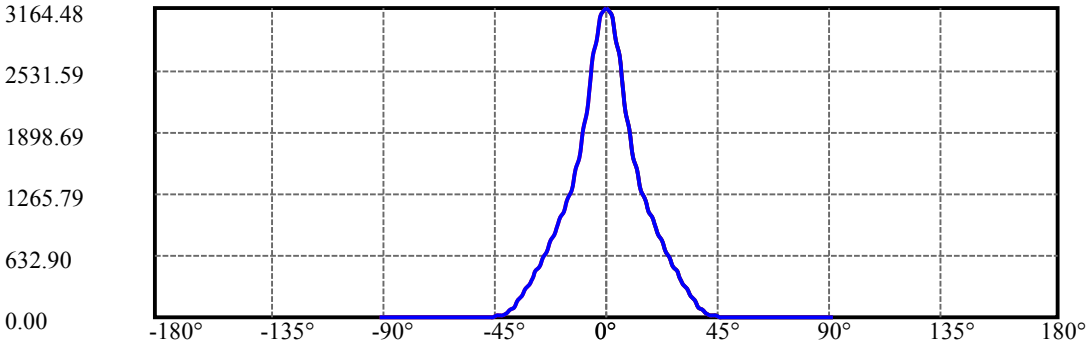
ZONAL LUMEN SUMMARY

| | |
|---|---|
| 0-10 | 223.74 |
| 10-20 | 344.73 |
| 20-30 | 279.29 |
| 30-40 | 110.97 |
| 40-50 | 9.20 |
| 50-60 | 5.27 |
| 60-70 | 5.06 |
| 70-80 | 5.08 |
| 80-90 | 4.46 |
| 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:

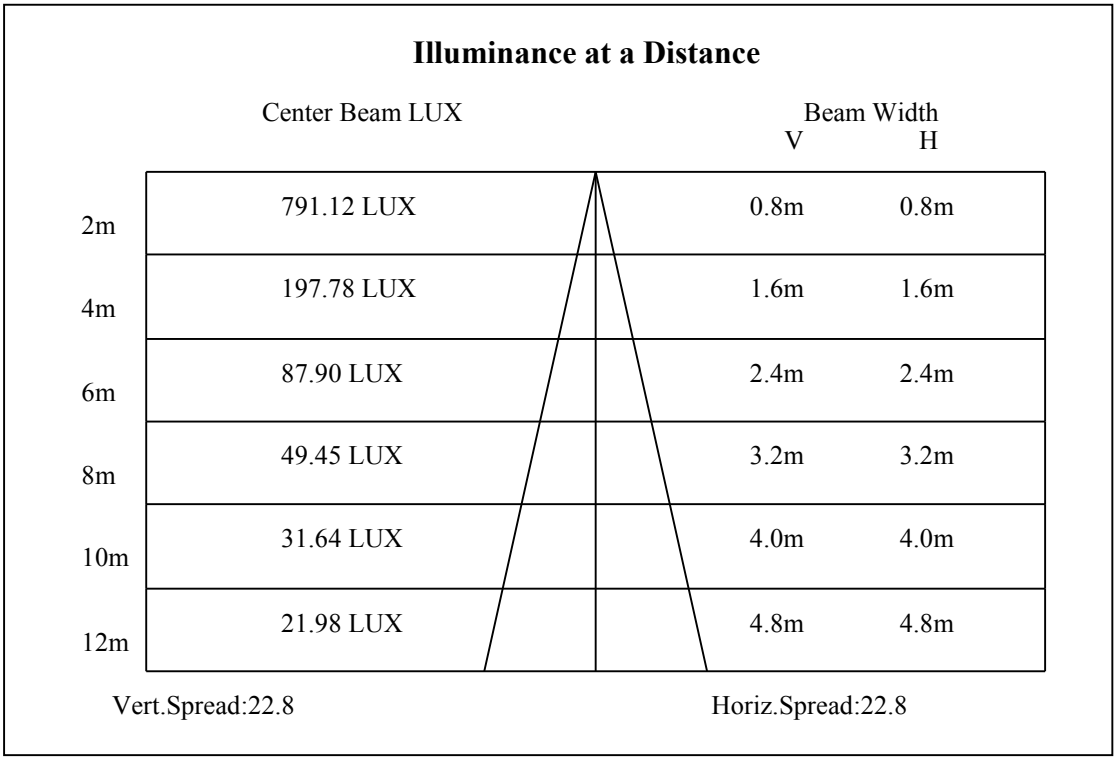
C90/C270:

Field angle(10%Imax):C0/180Left:31.4 Right:31.4
:C90/270Left:31.4 Right:31.4

Beam Angle(50%Imax):C0/180Left:11.4 Right:11.4
:C90/270Left:11.4 Right:11.4

Lux distance Curve

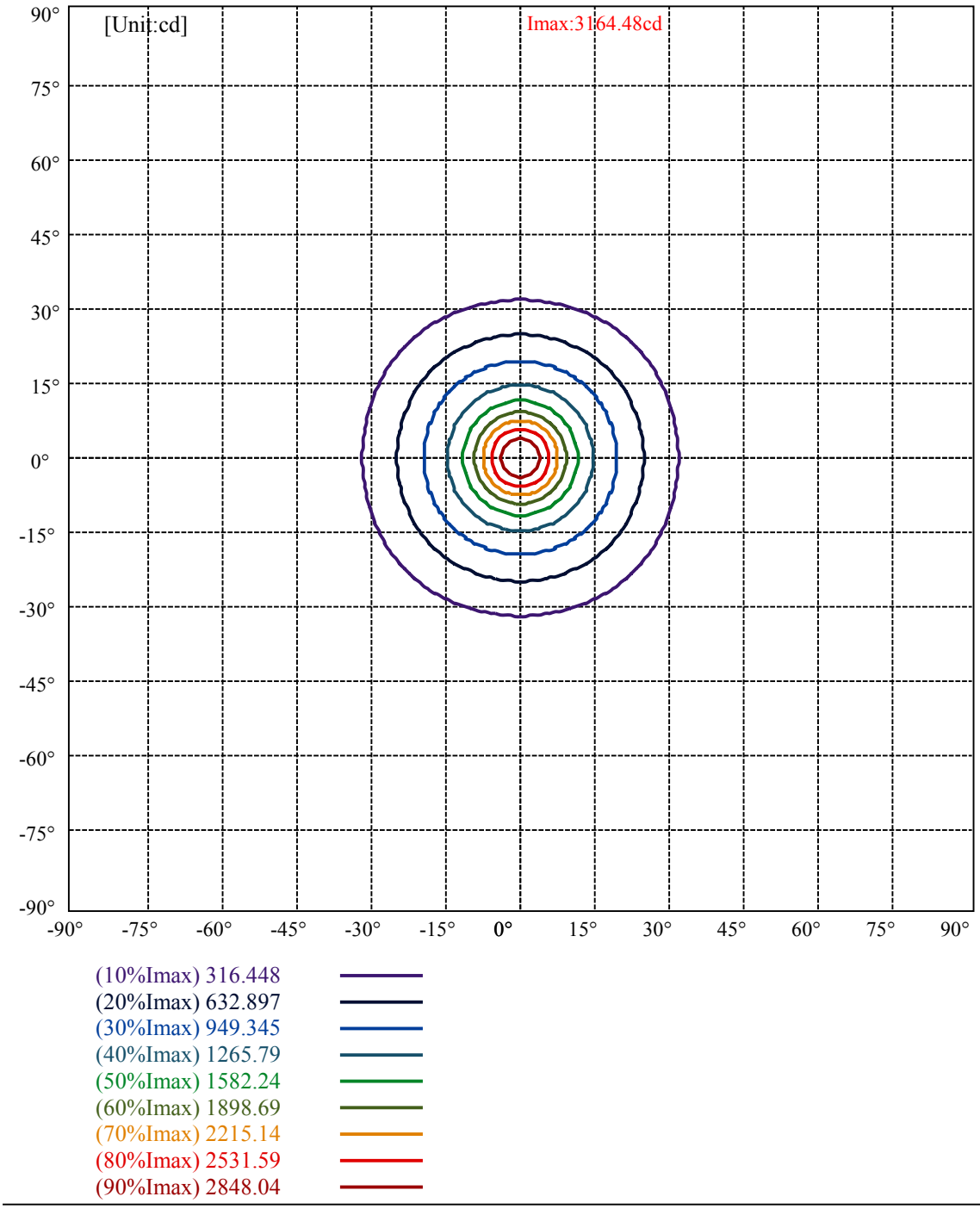





Equipment: GMS1980 Date: 2019/12/26 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

ISO-Intensity(V-H)





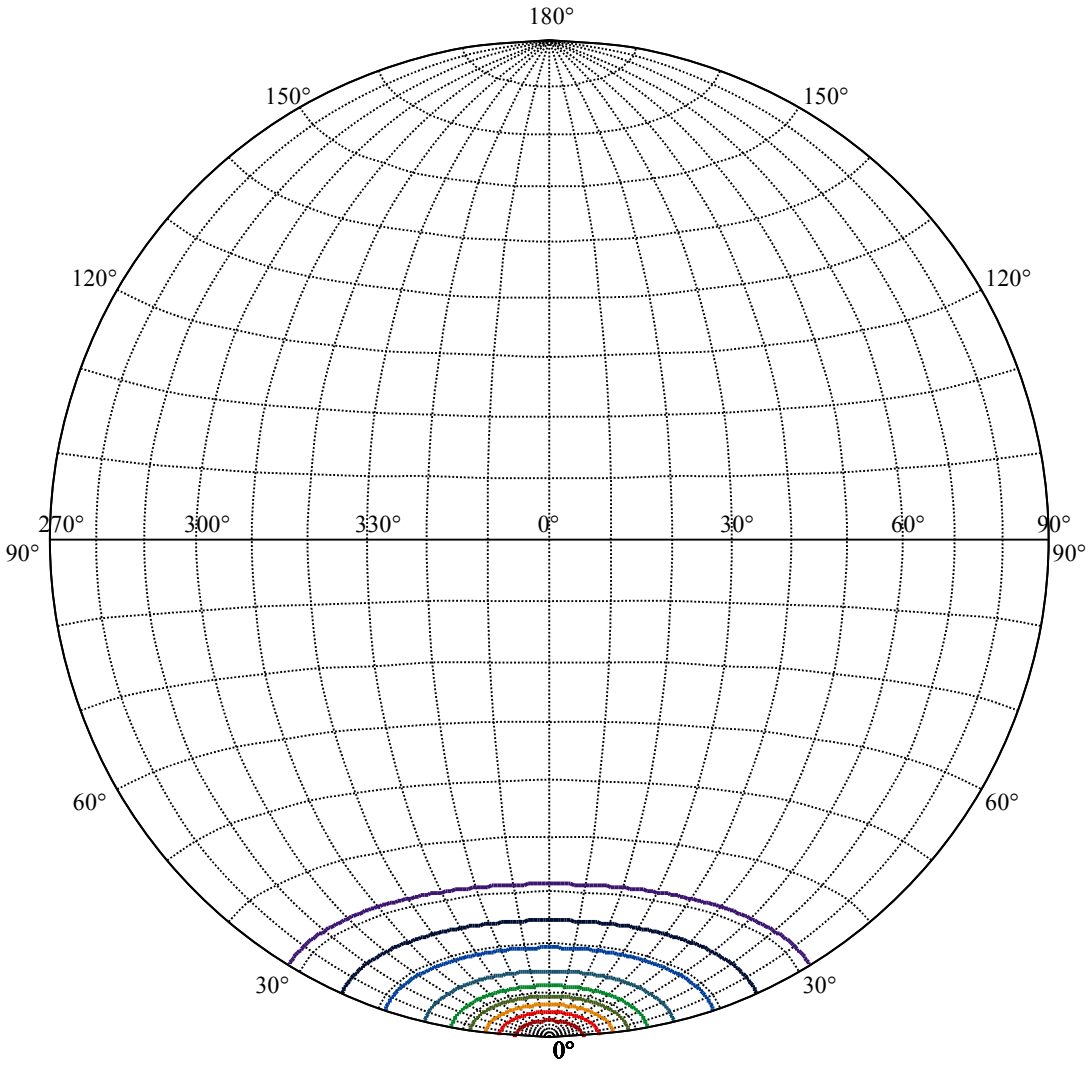

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/12/26
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

ISO candela diagram on circular web






House [Unit:cd] Road

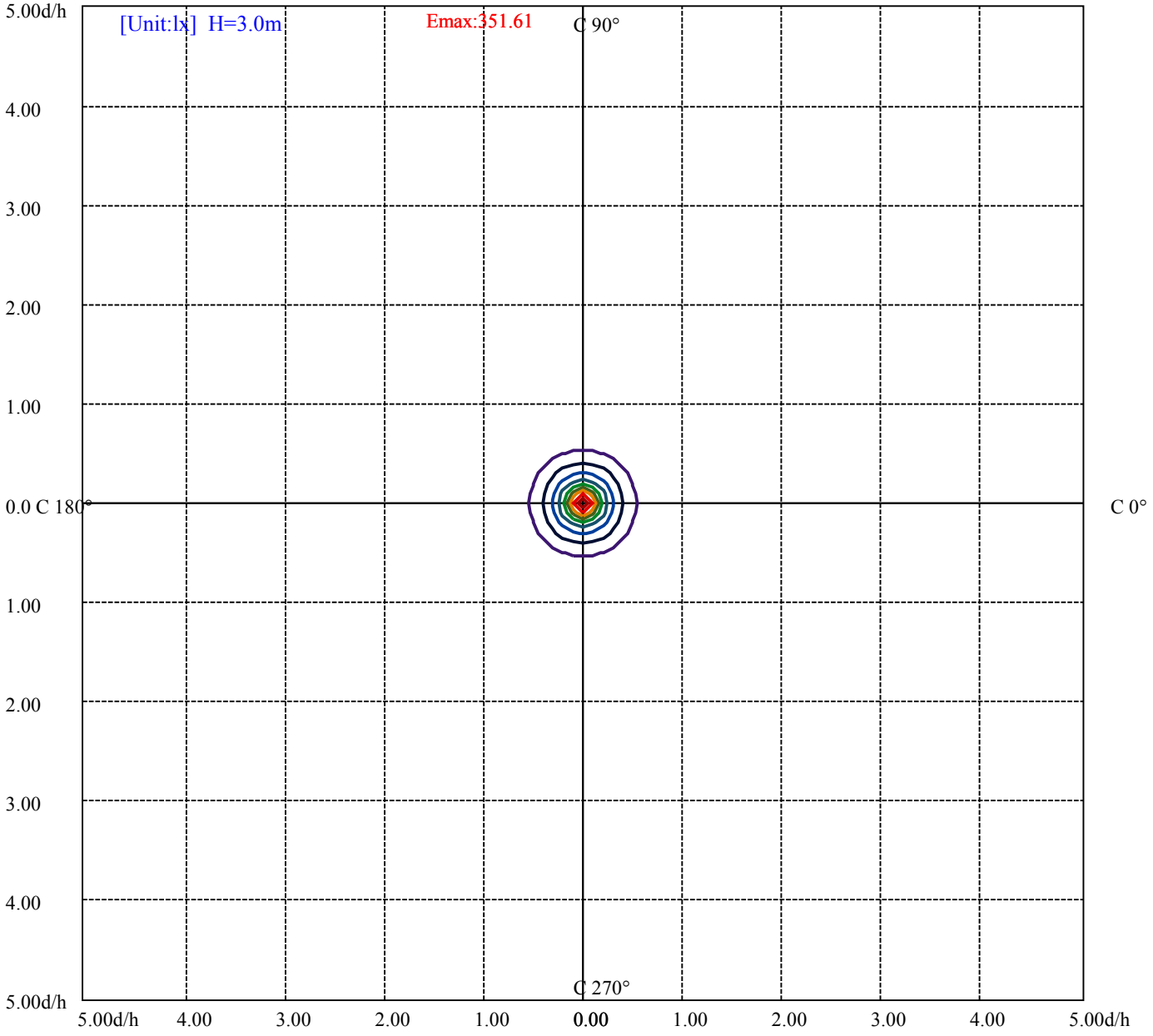
Imax:3164.48

(10%Imax) 316.448
(20%Imax) 632.897
(30%Imax) 949.345
(40%Imax) 1265.79
(50%Imax) 1582.24
(60%Imax) 1898.69
(70%Imax) 2215.14
(80%Imax) 2531.59
(90%Imax) 2848.04

Equipment: GMS1980 Date: 2019/12/26 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

## ISO illuminance diagram



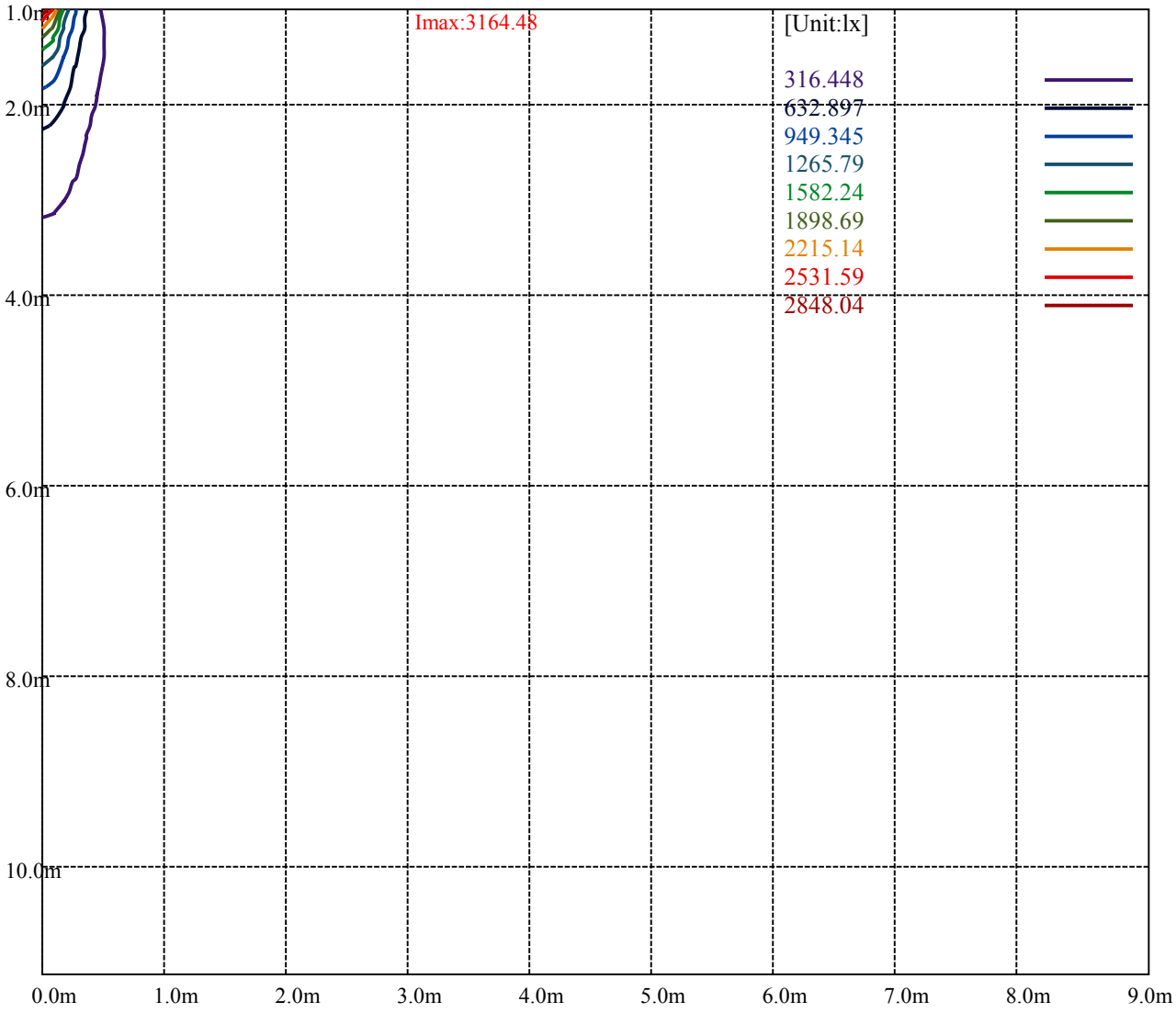



(10%Emax) 35.16089
(20%Emax) 70.32178
(30%Emax) 105.4827
(40%Emax) 140.6433
(50%Emax) 175.8044
(60%Emax) 210.9655
(70%Emax) 246.1266
(80%Emax) 281.2867
(90%Emax) 316.4478

Equipment: GMS1980
Temperature(°C): 25.0
Date: 2019/12/26
Humidity(%): 65.0%
Operator: NT07
Distance(m): 7.50

## Space ISO Lux diagram






Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/12/26
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

## Luminance Limitting Curve(no luminous side)



Luminance Table

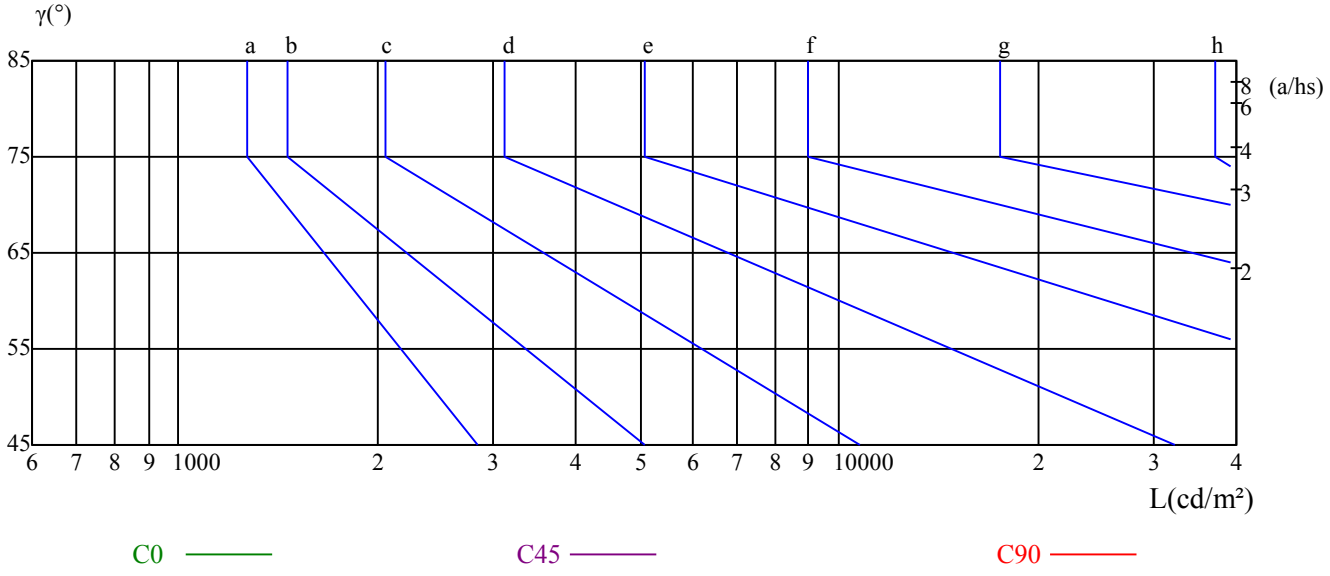
| γ | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 |
|---|---|---|---|---|---|---|---|---|---|
| C0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C90 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| 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

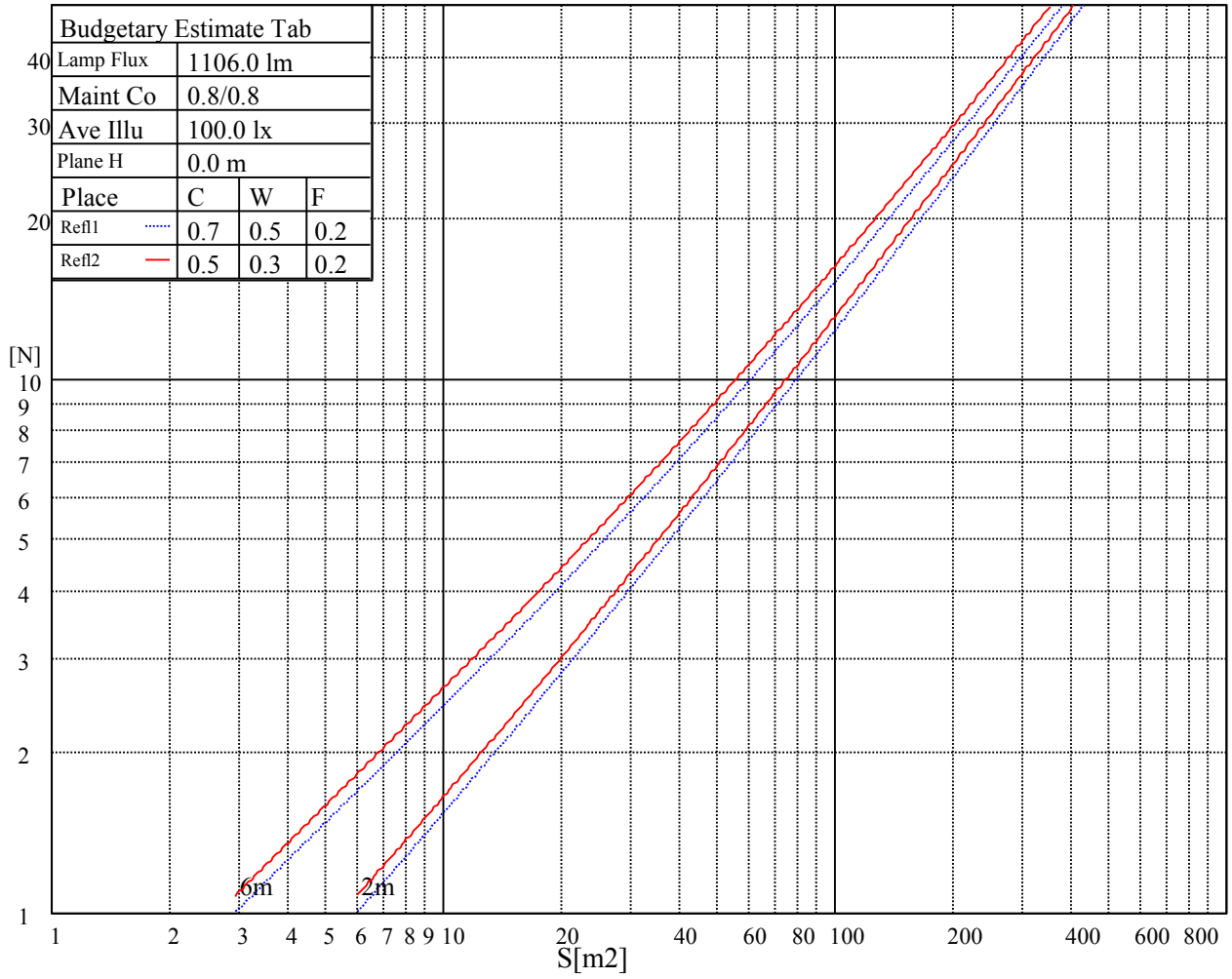
| Glare | Quality | Service Values Illuminance(lx) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1.15 | A | 2000 | 1000 | 500 | <=300 | | | | |
| 1.5 | B | | 2000 | 1000 | 500 | <=300 | | | |
| 1.85 | C | | | 2000 | 1000 | 500 | <=300 | | |
| 2.2 | D | | | | 2000 | 1000 | 500 | <=300 |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

Luminance Limitting Curve



## Budgetary Estimate Table






Equipment: GMS1980 Date: 2019/12/26 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

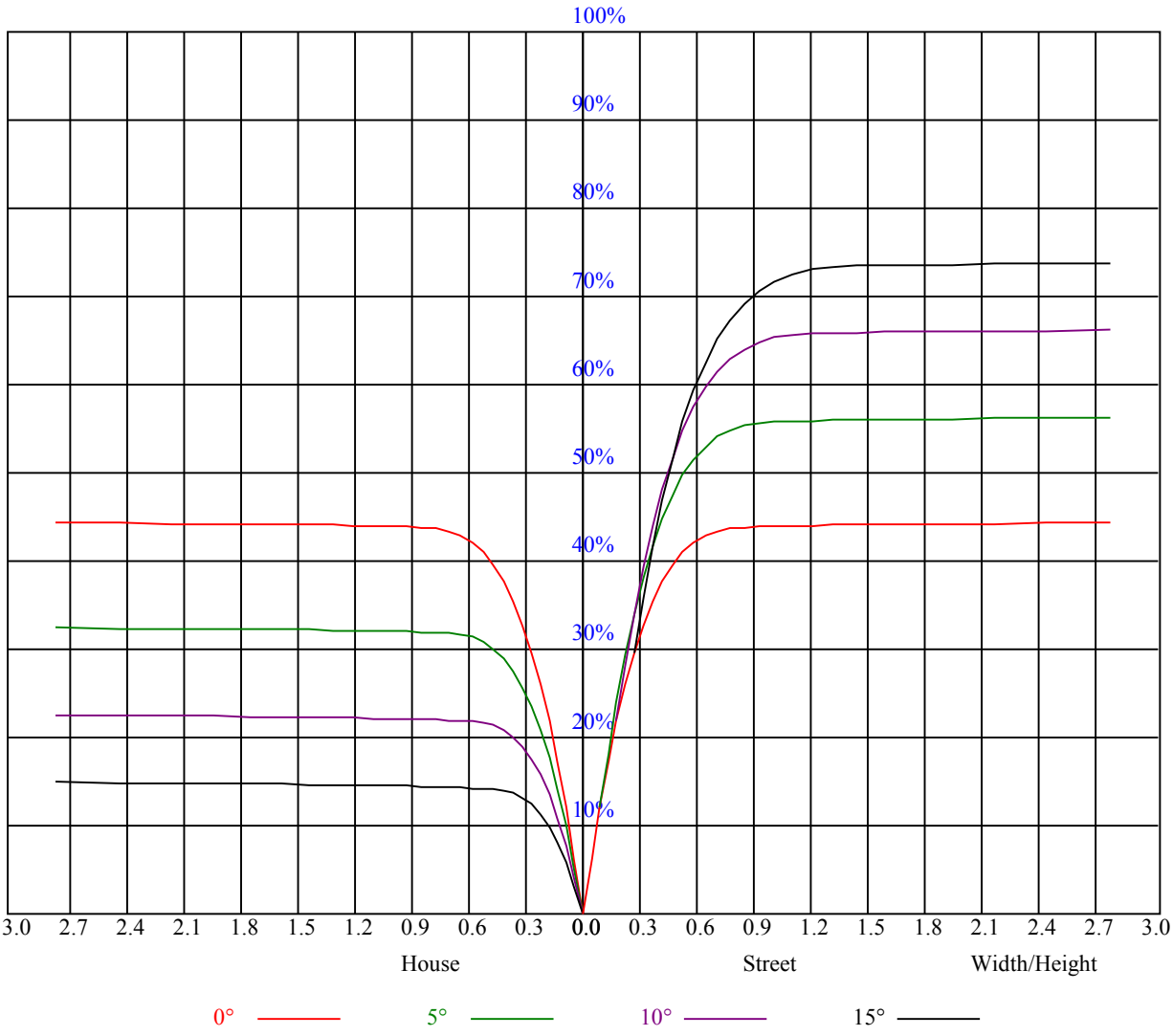
Utilization factor table for indoor luminaire



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

## Coefficient Utilization Curve

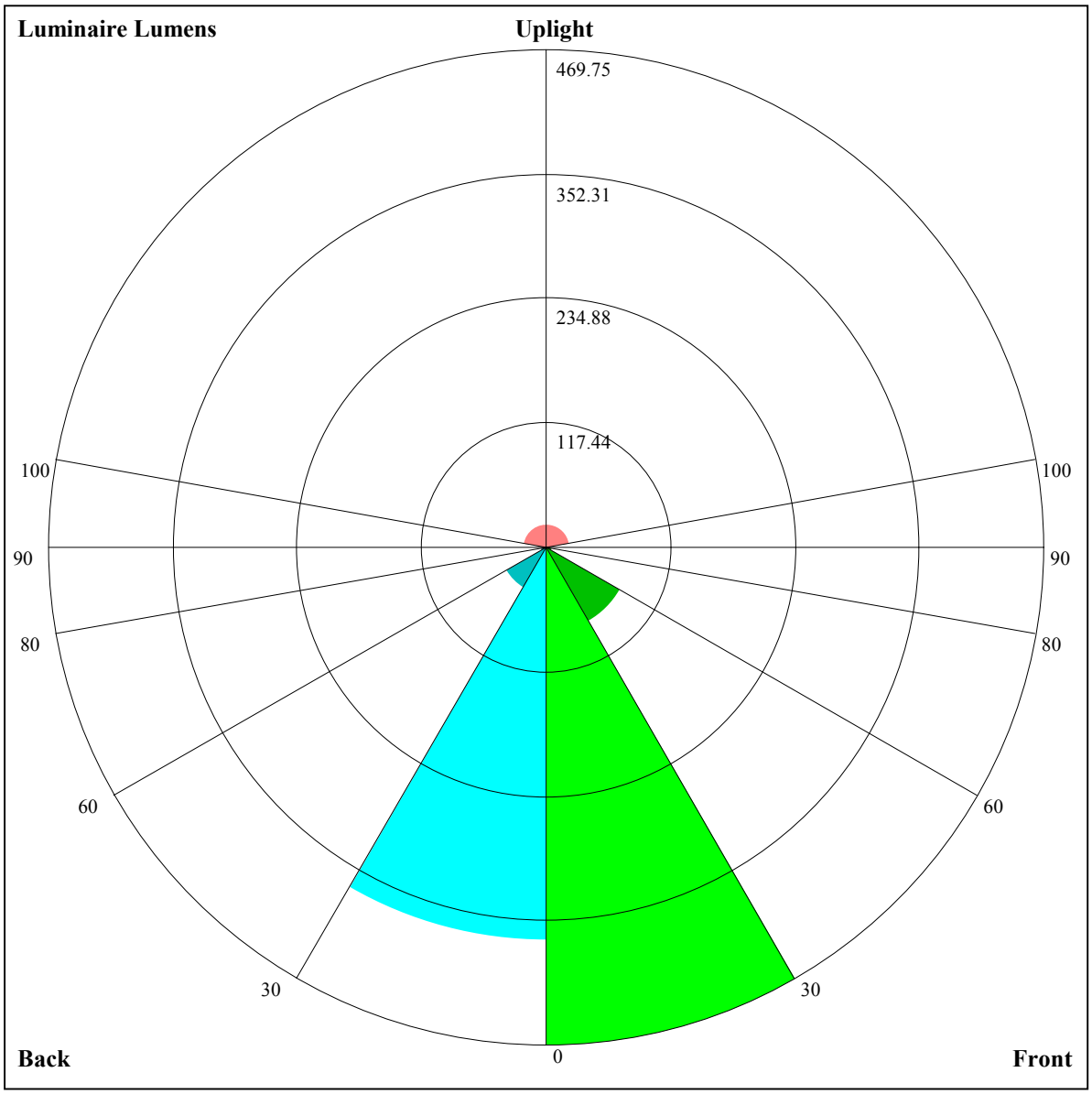





| | | |
|---|---|---|
| Equipment: GMS1980 | Date: 2019/12/26 | Operator: NT07 |
| Temperature(°C): 25.0 | Humidity(%): 65.0% | Distance(m): 7.50 |

LCS Graph






Luminaire Lumens:

FL=469.75,FM=81.27,FH=5.12,FVH=2.48

BL=370.37,BM=43.32,BH=5.03,BVH=2.45

UL=4.78,UH=22.74

BUG Rating:B1-U2-G0

| | | |
|---|---|---|
| Equipment: GMS1980 | Date: 2019/12/26 | 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 | 3095.44 | 3173.06 | 3222.00 | 3220.31 | 3186.56 | 3105.00 | 3006.56 | 2884.50 | 2726.44 |
| 45.0 | 3215.25 | 3211.88 | 3159.00 | 3064.50 | 2949.19 | 2814.19 | 2611.13 | 2443.50 | 2282.06 |
| 90.0 | 3183.19 | 3110.06 | 3019.50 | 2868.75 | 2652.75 | 2482.31 | 2273.63 | 2001.94 | 1839.94 |
| 135.0 | 3164.06 | 3095.44 | 2959.88 | 2789.44 | 2606.63 | 2342.25 | 2120.06 | 1908.56 | 1684.69 |
| 180.0 | 3095.44 | 2973.94 | 2800.13 | 2592.00 | 2382.19 | 2140.31 | 1923.75 | 1682.44 | 1466.44 |
| 225.0 | 3215.25 | 3177.00 | 3099.38 | 2991.38 | 2827.69 | 2653.88 | 2438.44 | 2208.94 | 2010.38 |
| 270.0 | 3183.19 | 3193.31 | 3170.25 | 3092.63 | 2999.81 | 2871.00 | 2673.00 | 2502.56 | 2329.31 |
| 315.0 | 3164.06 | 3196.13 | 3182.63 | 3130.88 | 3049.88 | 2949.75 | 2831.63 | 2670.19 | 2509.31 |
| 360.0 | 3095.44 | 3173.06 | 3222.00 | 3220.31 | 3186.56 | 3105.00 | 3006.56 | 2884.50 | 2726.44 |

| C/γ(°) | 9.0 | 10.0 | 11.0 | 12.0 | 13.0 | 14.0 | 15.0 | 16.0 | 17.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 2564.44 | 2423.81 | 2280.38 | 2163.94 | 2049.19 | 1940.63 | 1844.44 | 1741.50 | 1635.19 |
| 45.0 | 2104.31 | 1953.00 | 1830.38 | 1697.06 | 1578.94 | 1480.50 | 1375.88 | 1289.81 | 1186.88 |
| 90.0 | 1680.75 | 1486.13 | 1379.25 | 1267.88 | 1106.94 | 1057.84 | 989.10 | 932.06 | 884.08 |
| 135.0 | 1475.44 | 1313.44 | 1180.13 | 1046.81 | 969.75 | 911.25 | 865.13 | 831.38 | 804.38 |
| 180.0 | 1299.94 | 1112.63 | 1026.39 | 952.26 | 896.63 | 846.84 | 822.49 | 798.92 | 774.06 |
| 225.0 | 1819.69 | 1599.19 | 1441.13 | 1305.56 | 1113.30 | 1069.65 | 993.49 | 928.80 | 883.24 |
| 270.0 | 2123.44 | 1967.06 | 1818.00 | 1667.81 | 1531.13 | 1417.50 | 1297.69 | 1187.44 | 1102.50 |
| 315.0 | 2370.94 | 2223.56 | 2088.56 | 1969.88 | 1854.00 | 1716.19 | 1609.31 | 1509.19 | 1404.00 |
| 360.0 | 2564.44 | 2423.81 | 2280.38 | 2163.94 | 2049.19 | 1940.63 | 1844.44 | 1741.50 | 1635.19 |

| C/γ(°) | 18.0 | 19.0 | 20.0 | 21.0 | 22.0 | 23.0 | 24.0 | 25.0 | 26.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 1540.69 | 1443.38 | 1324.13 | 1222.31 | 1113.19 | 992.81 | 882.00 | 795.94 | 710.44 |
| 45.0 | 1087.88 | 1002.94 | 917.44 | 837.00 | 766.13 | 707.06 | 635.63 | 587.81 | 545.06 |
| 90.0 | 842.40 | 805.56 | 763.65 | 719.38 | 678.38 | 632.53 | 591.69 | 549.11 | 510.53 |
| 135.0 | 782.44 | 759.94 | 733.50 | 701.44 | 668.25 | 632.25 | 592.88 | 559.69 | 519.19 |
| 180.0 | 747.90 | 723.71 | 692.27 | 659.31 | 628.71 | 591.69 | 557.33 | 510.02 | 448.48 |
| 225.0 | 852.98 | 822.88 | 789.92 | 755.78 | 715.89 | 678.71 | 638.61 | 597.99 | 562.11 |
| 270.0 | 1013.63 | 946.69 | 878.63 | 816.75 | 763.31 | 714.38 | 653.63 | 606.94 | 561.94 |
| 315.0 | 1303.31 | 1187.44 | 1105.88 | 1004.01 | 914.79 | 819.23 | 741.21 | 666.39 | 603.11 |
| 360.0 | 1540.69 | 1443.38 | 1324.13 | 1222.31 | 1113.19 | 992.81 | 882.00 | 795.94 | 710.44 |

| C/γ(°) | 27.0 | 28.0 | 29.0 | 30.0 | 31.0 | 32.0 | 33.0 | 34.0 | 35.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 637.88 | 580.50 | 530.44 | 493.31 | 460.13 | 433.13 | 413.44 | 394.88 | 364.50 |
| 45.0 | 503.44 | 469.13 | 444.38 | 421.31 | 402.19 | 367.88 | 317.81 | 284.06 | 216.68 |
| 90.0 | 478.07 | 449.89 | 406.97 | 362.36 | 311.85 | 246.26 | 193.33 | 144.06 | 94.05 |
| 135.0 | 462.38 | 408.38 | 357.19 | 289.13 | 215.33 | 162.90 | 109.01 | 65.14 | 37.52 |
| 180.0 | 385.48 | 321.41 | 252.06 | 206.04 | 162.00 | 101.36 | 61.20 | 33.08 | 21.21 |
| 225.0 | 523.63 | 478.18 | 433.86 | 380.53 | 323.72 | 259.37 | 210.99 | 167.40 | 111.54 |
| 270.0 | 512.44 | 475.31 | 444.94 | 416.81 | 391.50 | 360.56 | 316.69 | 288.56 | 216.51 |
| 315.0 | 555.92 | 515.76 | 475.14 | 448.93 | 425.81 | 402.24 | 384.69 | 355.16 | 309.99 |
| 360.0 | 637.88 | 580.50 | 530.44 | 493.31 | 460.13 | 433.13 | 413.44 | 394.88 | 364.50 |

| C/γ(°) | 36.0 | 37.0 | 38.0 | 39.0 | 40.0 | 41.0 | 42.0 | 43.0 | 44.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 322.88 | 285.75 | 220.61 | 177.75 | 137.48 | 95.63 | 43.37 | 24.13 | 19.13 |
| 45.0 | 171.84 | 124.59 | 84.26 | 41.68 | 22.16 | 17.55 | 12.54 | 9.68 | 8.61 |
| 90.0 | 53.38 | 29.64 | 20.08 | 14.96 | 11.48 | 9.96 | 9.39 | 8.89 | 8.49 |
| 135.0 | 21.99 | 16.43 | 11.53 | 9.34 | 8.61 | 8.10 | 7.65 | 7.43 | 7.26 |
| 180.0 | 14.40 | 10.35 | 8.72 | 7.88 | 7.43 | 7.03 | 6.86 | 6.64 | 6.47 |
| 225.0 | 68.63 | 36.06 | 21.88 | 15.86 | 11.70 | 9.68 | 9.06 | 8.49 | 8.16 |
| 270.0 | 165.21 | 120.94 | 76.44 | 42.58 | 25.54 | 19.46 | 14.23 | 11.42 | 10.35 |
| 315.0 | 258.24 | 210.43 | 157.16 | 105.08 | 64.86 | 34.03 | 20.70 | 16.09 | 11.76 |
| 360.0 | 322.88 | 285.75 | 220.61 | 177.75 | 137.48 | 95.63 | 43.37 | 24.13 | 19.13 |

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 | 12.54 | 9.06 | 8.10 | 7.71 | 7.37 | 7.09 | 6.86 | 6.58 | 6.41 |
| 45.0 | 8.27 | 7.99 | 7.76 | 7.54 | 7.20 | 6.92 | 6.69 | 6.41 | 6.19 |
| 90.0 | 8.21 | 7.99 | 7.65 | 7.37 | 7.14 | 6.86 | 6.58 | 6.36 | 6.13 |
| 135.0 | 6.92 | 6.75 | 6.47 | 6.30 | 6.13 | 6.02 | 5.85 | 5.74 | 5.63 |
| 180.0 | 6.30 | 6.13 | 5.96 | 5.85 | 5.79 | 5.68 | 5.57 | 5.51 | 5.46 |
| 225.0 | 7.93 | 7.71 | 7.43 | 7.20 | 6.92 | 6.58 | 6.41 | 6.19 | 6.02 |
| 270.0 | 9.56 | 9.00 | 8.55 | 8.16 | 7.88 | 7.59 | 7.26 | 6.98 | 6.69 |
| 315.0 | 9.22 | 8.38 | 7.99 | 7.71 | 7.43 | 7.09 | 6.81 | 6.58 | 6.30 |
| 360.0 | 12.54 | 9.06 | 8.10 | 7.71 | 7.37 | 7.09 | 6.86 | 6.58 | 6.41 |

| C/γ(°) | 54.0 | 55.0 | 56.0 | 57.0 | 58.0 | 59.0 | 60.0 | 61.0 | 62.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 6.19 | 6.08 | 5.91 | 5.79 | 5.74 | 5.63 | 5.51 | 5.46 | 5.40 |
| 45.0 | 6.08 | 5.85 | 5.74 | 5.57 | 5.51 | 5.40 | 5.34 | 5.29 | 5.23 |
| 90.0 | 5.96 | 5.79 | 5.68 | 5.57 | 5.46 | 5.40 | 5.34 | 5.23 | 5.18 |
| 135.0 | 5.51 | 5.46 | 5.40 | 5.34 | 5.29 | 5.23 | 5.18 | 5.18 | 5.12 |
| 180.0 | 5.40 | 5.34 | 5.29 | 5.23 | 5.23 | 5.18 | 5.12 | 5.12 | 5.06 |
| 225.0 | 5.91 | 5.74 | 5.57 | 5.40 | 5.34 | 5.29 | 5.18 | 5.12 | 5.06 |
| 270.0 | 6.47 | 6.30 | 6.08 | 5.91 | 5.79 | 5.68 | 5.57 | 5.51 | 5.40 |
| 315.0 | 6.13 | 5.96 | 5.79 | 5.74 | 5.63 | 5.51 | 5.46 | 5.40 | 5.34 |
| 360.0 | 6.19 | 6.08 | 5.91 | 5.79 | 5.74 | 5.63 | 5.51 | 5.46 | 5.40 |

| C/γ(°) | 63.0 | 64.0 | 65.0 | 66.0 | 67.0 | 68.0 | 69.0 | 70.0 | 71.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 5.34 | 5.29 | 5.29 | 5.18 | 5.18 | 5.12 | 5.12 | 5.06 | 5.06 |
| 45.0 | 5.18 | 5.12 | 5.06 | 5.06 | 5.01 | 5.01 | 4.95 | 4.89 | 4.89 |
| 90.0 | 5.18 | 5.12 | 5.06 | 5.06 | 5.01 | 4.95 | 4.89 | 4.89 | 4.89 |
| 135.0 | 5.06 | 5.06 | 5.01 | 4.95 | 4.95 | 4.89 | 4.89 | 4.89 | 4.84 |
| 180.0 | 5.01 | 4.95 | 4.95 | 4.95 | 4.95 | 4.89 | 4.89 | 4.89 | 4.84 |
| 225.0 | 5.01 | 5.01 | 4.95 | 4.89 | 4.89 | 4.89 | 4.84 | 4.84 | 4.78 |
| 270.0 | 5.34 | 5.23 | 5.18 | 5.12 | 5.12 | 5.06 | 5.01 | 4.95 | 4.95 |
| 315.0 | 5.29 | 5.23 | 5.18 | 5.12 | 5.12 | 5.06 | 5.06 | 5.01 | 4.95 |
| 360.0 | 5.34 | 5.29 | 5.29 | 5.18 | 5.18 | 5.12 | 5.12 | 5.06 | 5.06 |

| C/γ(°) | 72.0 | 73.0 | 74.0 | 75.0 | 76.0 | 77.0 | 78.0 | 79.0 | 80.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 5.01 | 5.01 | 4.95 | 4.95 | 4.89 | 4.89 | 4.84 | 4.84 | 4.84 |
| 45.0 | 4.89 | 4.84 | 4.78 | 4.78 | 4.73 | 4.73 | 4.67 | 4.61 | 4.61 |
| 90.0 | 4.84 | 4.78 | 4.73 | 4.73 | 4.67 | 4.67 | 4.67 | 4.61 | 4.61 |
| 135.0 | 4.84 | 4.78 | 4.78 | 4.78 | 4.78 | 4.73 | 4.73 | 4.67 | 4.67 |
| 180.0 | 4.84 | 4.84 | 4.78 | 4.78 | 4.78 | 4.78 | 4.73 | 4.73 | 4.67 |
| 225.0 | 4.84 | 4.78 | 4.78 | 4.73 | 4.73 | 4.67 | 4.67 | 4.67 | 4.61 |
| 270.0 | 4.89 | 4.89 | 4.84 | 4.78 | 4.78 | 4.73 | 4.73 | 4.73 | 4.67 |
| 315.0 | 4.89 | 4.89 | 4.89 | 4.84 | 4.84 | 4.78 | 4.78 | 4.78 | 4.73 |
| 360.0 | 5.01 | 5.01 | 4.95 | 4.95 | 4.89 | 4.89 | 4.84 | 4.84 | 4.84 |

| C/γ(°) | 81.0 | 82.0 | 83.0 | 84.0 | 85.0 | 86.0 | 87.0 | 88.0 | 89.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 4.78 | 4.78 | 4.78 | 4.67 | 4.67 | 4.67 | 4.56 | 4.56 | 4.50 |
| 45.0 | 4.56 | 4.61 | 4.56 | 4.50 | 4.50 | 4.44 | 4.39 | 4.39 | 4.39 |
| 90.0 | 4.56 | 4.56 | 4.50 | 4.50 | 4.44 | 4.39 | 4.39 | 4.39 | 4.33 |
| 135.0 | 4.61 | 4.61 | 4.56 | 4.56 | 4.50 | 4.44 | 4.44 | 4.39 | 4.39 |
| 180.0 | 4.61 | 4.61 | 4.56 | 4.61 | 4.50 | 4.50 | 4.39 | 4.39 | 4.39 |
| 225.0 | 4.61 | 4.56 | 4.56 | 4.56 | 4.50 | 4.44 | 4.44 | 4.39 | 4.39 |
| 270.0 | 4.61 | 4.61 | 4.61 | 4.56 | 4.56 | 4.50 | 4.44 | 4.39 | 4.39 |
| 315.0 | 4.73 | 4.73 | 4.61 | 4.61 | 4.61 | 4.56 | 4.50 | 4.50 | 4.44 |
| 360.0 | 4.78 | 4.78 | 4.78 | 4.67 | 4.67 | 4.67 | 4.56 | 4.56 | 4.50 |

Intensity data(cd)



| C/γ(°) | 90.0 |
|---|---|
| 0.0 | 4.50 |
| 45.0 | 4.33 |
| 90.0 | 4.33 |
| 135.0 | 4.39 |
| 180.0 | 4.39 |
| 225.0 | 4.33 |
| 270.0 | 4.33 |
| 315.0 | 4.44 |
| 360.0 | 4.50 |