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

## Nata

Client:
LumCAT: 3-1548-A3
Luminaire: 99.02.73.172+92.76.365.00

| | |
|---|---|
| Report No: | Voltage(V): 34.9200 |
| Test No: GC20190823010 | Current(A): 0.3980 |
| LampCAT: TRIDONIC SLE 13MM G7 | Power (W): 13.9000 |
| Lamp flux(lm): 1702.0 | PF: 0.0000 |
| Number of Lamps: 1 | Ballast type: DC |
| Length(mm): 79 | Width(mm): 79 |
| Phm Type: C | Height(mm): 0 |

## Photometric Results

Lumens(lm): 1551.08, Efficiency(%): 91.13% , Luminous Efficacy(lm/W): 111.59
Central intensity(cd): 12819.380, Maximum intensity(cd): 12819.380
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=13.8
[C90/270]Total=13.8
Field angle(10%Imax): [C0/180]Total=28.4
[C90/270]Total=28.4
Maximum s/h(1/2): C0_180=0.24 C90_270=0.24
Maximum s/h(1/4): C0_180=0.24 C90_270=0.24
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 91.13%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.591%

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 0.0 | 12819.375 | 0.000 | 0 | .000% | .000% |
| 1.0 | 12617.578 | 12.171 | 12.171 | .715% | .785% |
| 2.0 | 11989.406 | 35.318 | 47.489 | 2.075% | 3.062% |
| 3.0 | 11057.906 | 55.122 | 102.611 | 3.239% | 6.615% |
| 4.0 | 10096.875 | 70.812 | 173.423 | 4.161% | 11.181% |
| 5.0 | 8958.164 | 81.974 | 255.397 | 4.816% | 16.466% |
| 6.0 | 7598.531 | 87.010 | 342.406 | 5.112% | 22.075% |
| 7.0 | 6293.813 | 86.230 | 428.636 | 5.066% | 27.635% |
| 8.0 | 5199.750 | 82.257 | 510.893 | 4.833% | 32.938% |
| 9.0 | 4099.852 | 75.368 | 586.261 | 4.428% | 37.797% |
| 10.0 | 3151.055 | 65.618 | 651.879 | 3.855% | 42.027% |
| 11.0 | 2486.391 | 56.330 | 708.209 | 3.310% | 45.659% |
| 12.0 | 2010.516 | 49.158 | 757.367 | 2.888% | 48.828% |
| 13.0 | 1547.578 | 42.226 | 799.592 | 2.481% | 51.551% |
| 14.0 | 1322.543 | 36.737 | 836.33 | 2.158% | 53.919% |
| 15.0 | 1143.070 | 33.849 | 870.179 | 1.989% | 56.101% |
| 16.0 | 1019.869 | 31.693 | 901.872 | 1.862% | 58.145% |
| 17.0 | 914.210 | 30.119 | 931.991 | 1.770% | 60.087% |
| 18.0 | 840.600 | 28.933 | 960.924 | 1.700% | 61.952% |
| 19.0 | 779.379 | 28.184 | 989.108 | 1.656% | 63.769% |
| 20.0 | 735.321 | 27.723 | 1016.831 | 1.629% | 65.556% |
| 21.0 | 701.592 | 27.592 | 1044.423 | 1.621% | 67.335% |
| 22.0 | 674.627 | 27.656 | 1072.078 | 1.625% | 69.118% |
| 23.0 | 653.836 | 27.875 | 1099.953 | 1.638% | 70.915% |
| 24.0 | 632.588 | 28.126 | 1128.079 | 1.653% | 72.729% |
| 25.0 | 612.577 | 28.312 | 1156.391 | 1.663% | 74.554% |
| 26.0 | 595.990 | 28.528 | 1184.92 | 1.676% | 76.393% |
| 27.0 | 580.155 | 28.775 | 1213.694 | 1.691% | 78.248% |
| 28.0 | 562.542 | 28.931 | 1242.625 | 1.700% | 80.114% |
| 29.0 | 549.703 | 29.099 | 1271.725 | 1.710% | 81.990% |
| 30.0 | 538.059 | 29.369 | 1301.094 | 1.726% | 83.883% |
| 31.0 | 526.556 | 29.627 | 1330.721 | 1.741% | 85.793% |
| 32.0 | 510.096 | 29.699 | 1360.419 | 1.745% | 87.708% |
| 33.0 | 481.746 | 29.220 | 1389.64 | 1.717% | 89.592% |
| 34.0 | 430.545 | 27.609 | 1417.248 | 1.622% | 91.372% |
| 35.0 | 363.945 | 24.674 | 1441.922 | 1.450% | 92.962% |
| 36.0 | 302.639 | 21.224 | 1463.146 | 1.247% | 94.331% |
| 37.0 | 233.515 | 17.486 | 1480.633 | 1.027% | 95.458% |

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 38.0 | 170.979 | 13.501 | 1494.134 | .793% | 96.329% |
| 39.0 | 102.452 | 9.333 | 1503.467 | .548% | 96.930% |
| 40.0 | 56.602 | 5.547 | 1509.014 | .326% | 97.288% |
| 41.0 | 31.458 | 3.136 | 1512.15 | .184% | 97.490% |
| 42.0 | 21.867 | 1.937 | 1514.087 | .114% | 97.615% |
| 43.0 | 18.766 | 1.505 | 1515.593 | .088% | 97.712% |
| 44.0 | 15.968 | 1.311 | 1516.903 | .077% | 97.797% |
| 45.0 | 13.563 | 1.135 | 1518.038 | .067% | 97.870% |
| 46.0 | 10.842 | 0.954 | 1518.993 | .056% | 97.931% |
| 47.0 | 9.668 | 0.816 | 1519.809 | .048% | 97.984% |
| 48.0 | 9.169 | 0.761 | 1520.57 | .045% | 98.033% |
| 49.0 | 8.923 | 0.743 | 1521.313 | .044% | 98.081% |
| 50.0 | 8.712 | 0.735 | 1522.048 | .043% | 98.128% |
| 51.0 | 8.564 | 0.731 | 1522.779 | .043% | 98.175% |
| 52.0 | 8.395 | 0.728 | 1523.507 | .043% | 98.222% |
| 53.0 | 8.234 | 0.723 | 1524.23 | .043% | 98.269% |
| 54.0 | 8.086 | 0.719 | 1524.95 | .042% | 98.315% |
| 55.0 | 7.959 | 0.716 | 1525.666 | .042% | 98.362% |
| 56.0 | 7.840 | 0.714 | 1526.38 | .042% | 98.408% |
| 57.0 | 7.727 | 0.712 | 1527.091 | .042% | 98.453% |
| 58.0 | 7.643 | 0.711 | 1527.802 | .042% | 98.499% |
| 59.0 | 7.559 | 0.711 | 1528.513 | .042% | 98.545% |
| 60.0 | 7.467 | 0.710 | 1529.223 | .042% | 98.591% |
| 61.0 | 7.397 | 0.709 | 1529.932 | .042% | 98.637% |
| 62.0 | 7.334 | 0.710 | 1530.642 | .042% | 98.682% |
| 63.0 | 7.270 | 0.710 | 1531.352 | .042% | 98.728% |
| 64.0 | 7.214 | 0.711 | 1532.063 | .042% | 98.774% |
| 65.0 | 7.165 | 0.712 | 1532.775 | .042% | 98.820% |
| 66.0 | 7.130 | 0.713 | 1533.488 | .042% | 98.866% |
| 67.0 | 7.095 | 0.715 | 1534.203 | .042% | 98.912% |
| 68.0 | 7.052 | 0.717 | 1534.92 | .042% | 98.958% |
| 69.0 | 7.038 | 0.719 | 1535.638 | .042% | 99.004% |
| 70.0 | 7.003 | 0.721 | 1536.36 | .042% | 99.051% |
| 71.0 | 6.982 | 0.723 | 1537.082 | .042% | 99.098% |
| 72.0 | 6.954 | 0.725 | 1537.807 | .043% | 99.144% |
| 73.0 | 6.933 | 0.726 | 1538.533 | .043% | 99.191% |
| 74.0 | 6.919 | 0.728 | 1539.261 | .043% | 99.238% |
| 75.0 | 6.898 | 0.730 | 1539.991 | .043% | 99.285% |

## Zonal flux distribution table



| γ(°) | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|---|---|---|---|---|---|
| 76.0 | 6.898 | 0.732 | 1540.724 | .043% | 99.332% |
| 77.0 | 6.877 | 0.734 | 1541.458 | .043% | 99.380% |
| 78.0 | 6.855 | 0.735 | 1542.193 | .043% | 99.427% |
| 79.0 | 6.855 | 0.737 | 1542.93 | .043% | 99.475% |
| 80.0 | 6.820 | 0.737 | 1543.667 | .043% | 99.522% |
| 81.0 | 6.820 | 0.738 | 1544.405 | .043% | 99.570% |
| 82.0 | 6.813 | 0.739 | 1545.144 | .043% | 99.617% |
| 83.0 | 6.806 | 0.740 | 1545.885 | .044% | 99.665% |
| 84.0 | 6.792 | 0.741 | 1546.625 | .044% | 99.713% |
| 85.0 | 6.785 | 0.741 | 1547.366 | .044% | 99.761% |
| 86.0 | 6.806 | 0.743 | 1548.109 | .044% | 99.808% |
| 87.0 | 6.820 | 0.746 | 1548.855 | .044% | 99.857% |
| 88.0 | 6.778 | 0.745 | 1549.6 | .044% | 99.905% |
| 89.0 | 6.736 | 0.741 | 1550.341 | .044% | 99.952% |
| 90.0 | 6.743 | 0.739 | 1551.08 | .043% | 100.000% |

## Zonal flux distribution table



ZONAL LUMEN SUMMARY

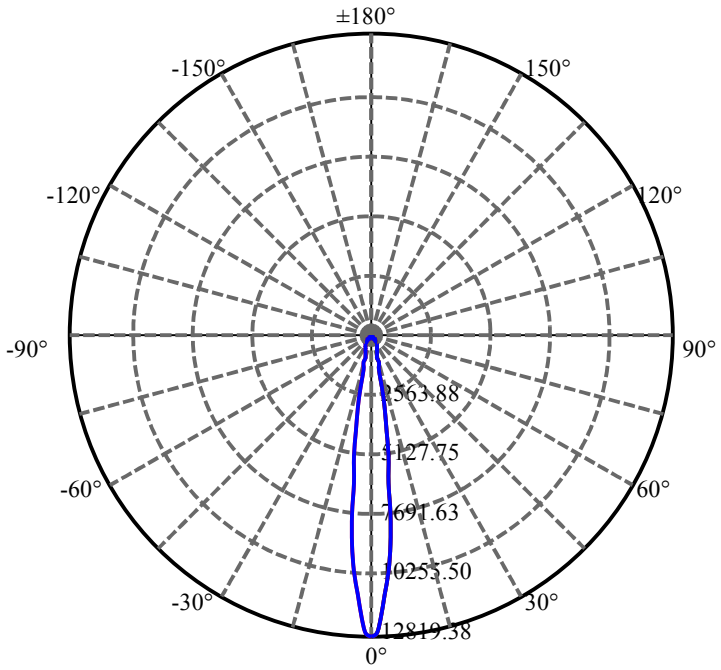
| Zone | Lumens | %Lamp | %Fixt |
|---|---|---|---|
| 0-30 | 1301.09 | 76.45% | 83.88% |
| 0-40 | 1509.01 | 88.66% | 97.29% |
| 0-60 | 1529.22 | 89.85% | 98.59% |
| 0-90 | 1550.34 | 91.09% | 99.95% |
| 0-120 | 1550.34 | 91.09% | 99.95% |
| 0-180 | 1551.08 | 91.13% | 100.00% |
| 60-90 | 21.83 | 1.28% | 1.41% |
| 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% |
| 0-27.94 | 1240.86 | 72.91% | 80.00% |

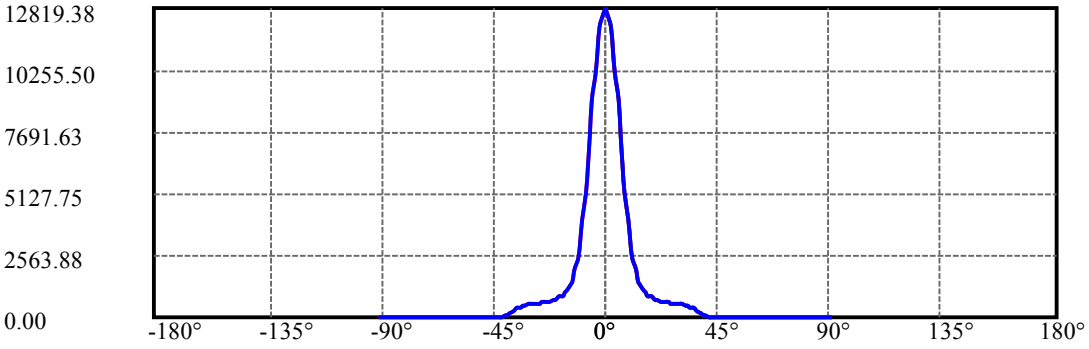
ZONAL LUMEN SUMMARY

| | |
|---|---|
| 0-10 | 651.88 |
| 10-20 | 364.95 |
| 20-30 | 284.26 |
| 30-40 | 207.92 |
| 40-50 | 13.03 |
| 50-60 | 7.17 |
| 60-70 | 7.14 |
| 70-80 | 7.31 |
| 80-90 | 6.67 |
| 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:

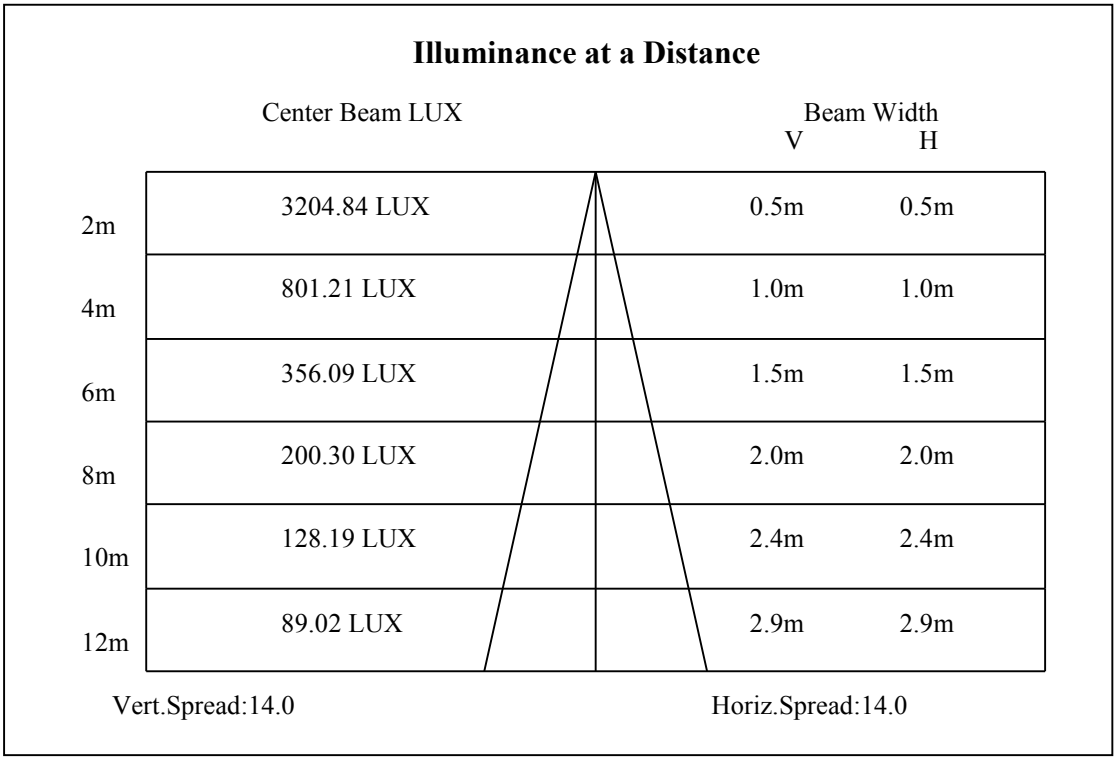
C90/C270:

Field angle(10%Imax):C0/180Left:14.2 Right:14.2
:C90/270Left:14.2 Right:14.2

Beam Angle(50%Imax):C0/180Left:6.9 Right:6.9
:C90/270Left:6.9 Right:6.9

Lux distance Curve

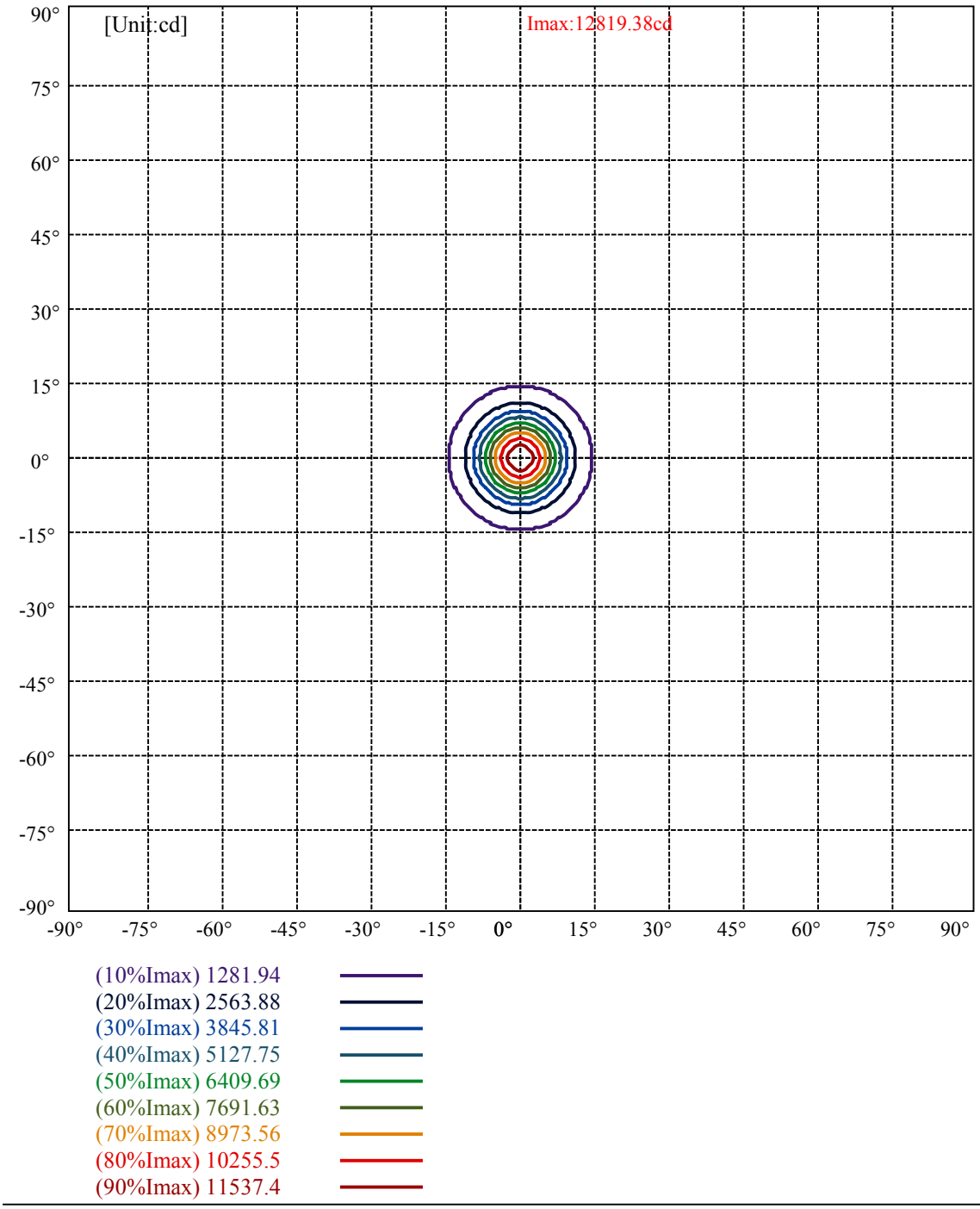





Equipment: GMS1980 Date: 2019/8/23 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

ISO-Intensity(V-H)






(10%Imax) 1281.94
(20%Imax) 2563.88
(30%Imax) 3845.81
(40%Imax) 5127.75
(50%Imax) 6409.69
(60%Imax) 7691.63
(70%Imax) 8973.56
(80%Imax) 10255.5
(90%Imax) 11537.4

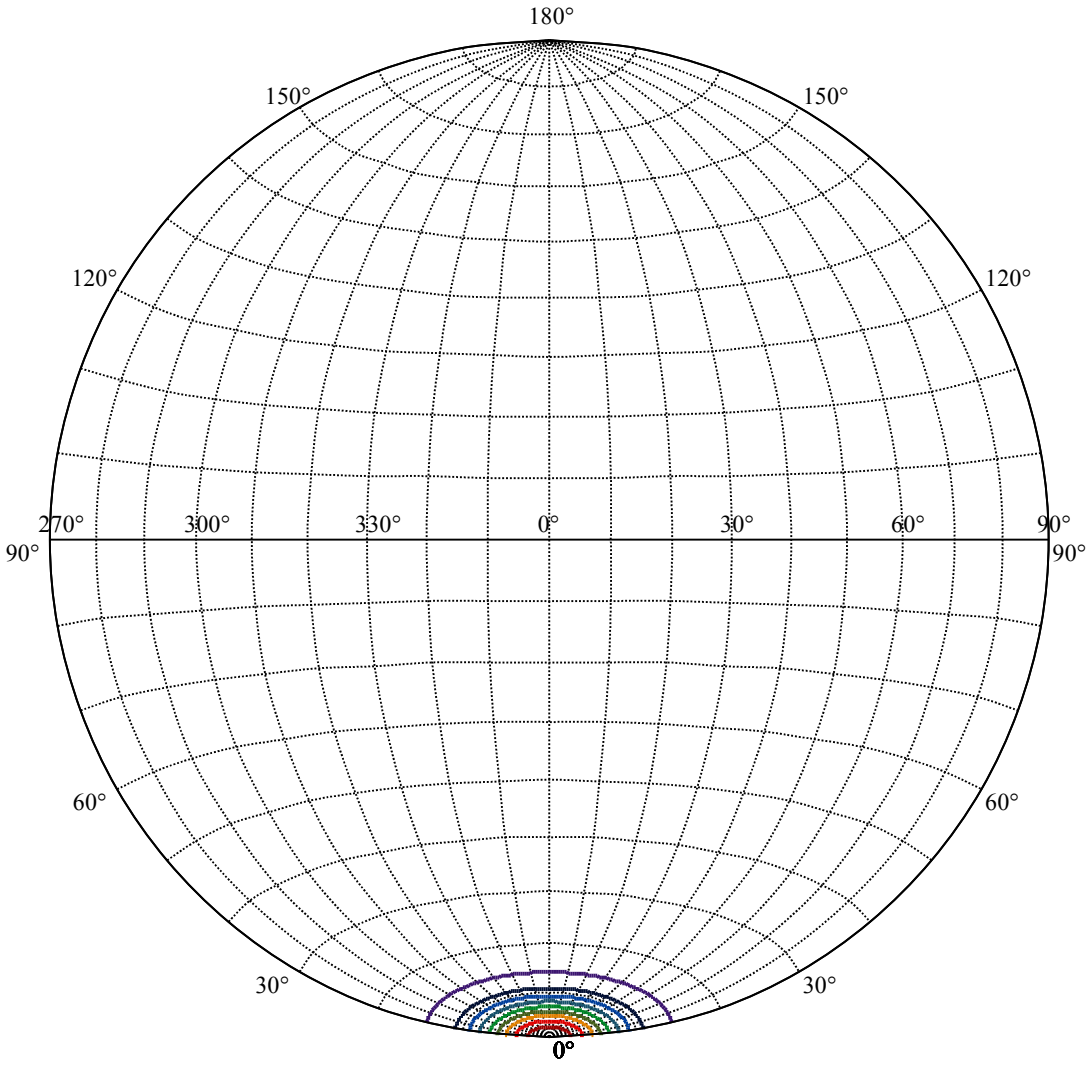
Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/8/23
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

ISO candela diagram on circular web






House [Unit:cd] Road

Imax:12819.38

(10%Imax) 1281.94
(20%Imax) 2563.88
(30%Imax) 3845.81
(40%Imax) 5127.75
(50%Imax) 6409.69
(60%Imax) 7691.63
(70%Imax) 8973.56
(80%Imax) 10255.5
(90%Imax) 11537.4

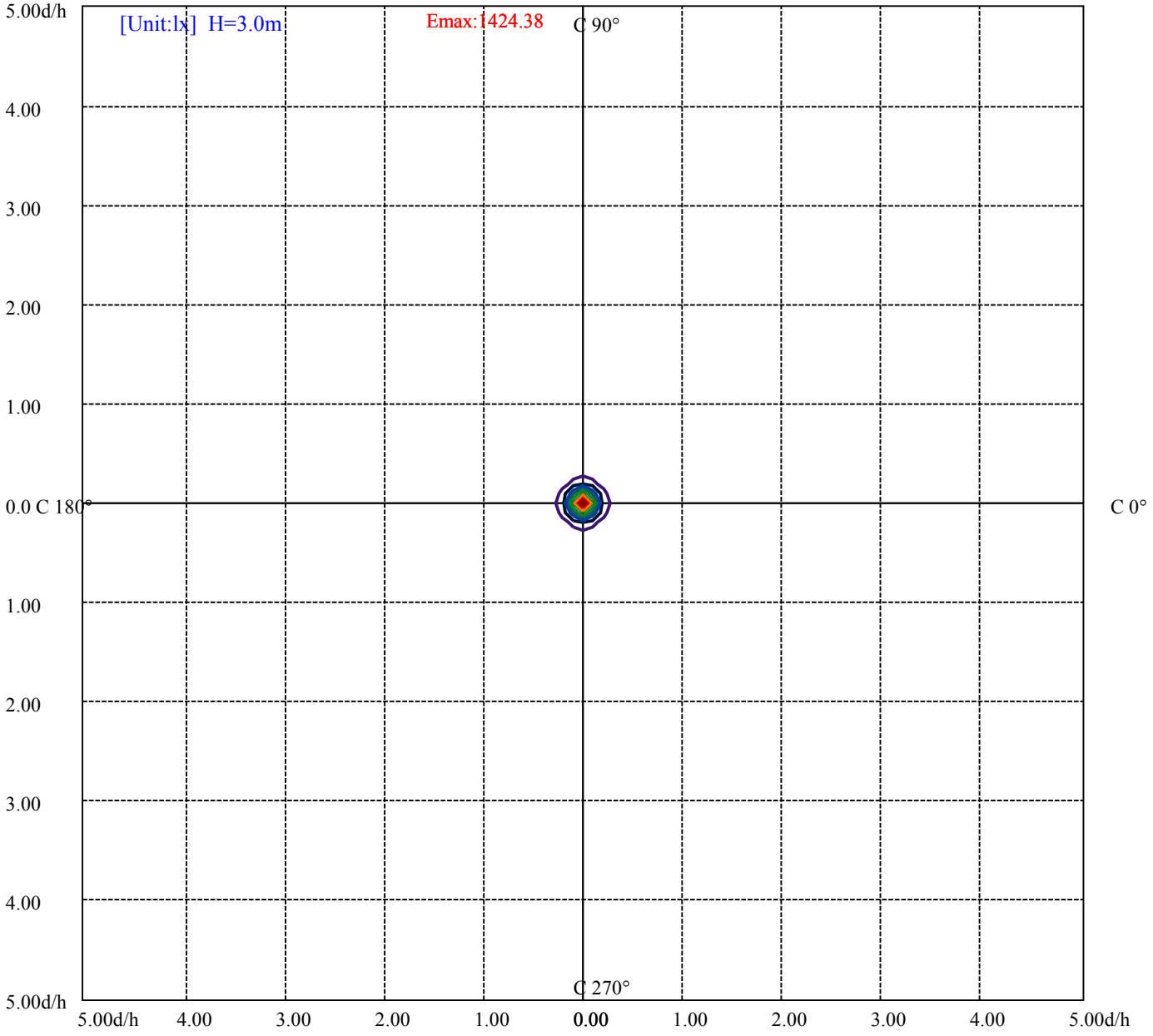
Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/8/23
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

## ISO illuminance diagram





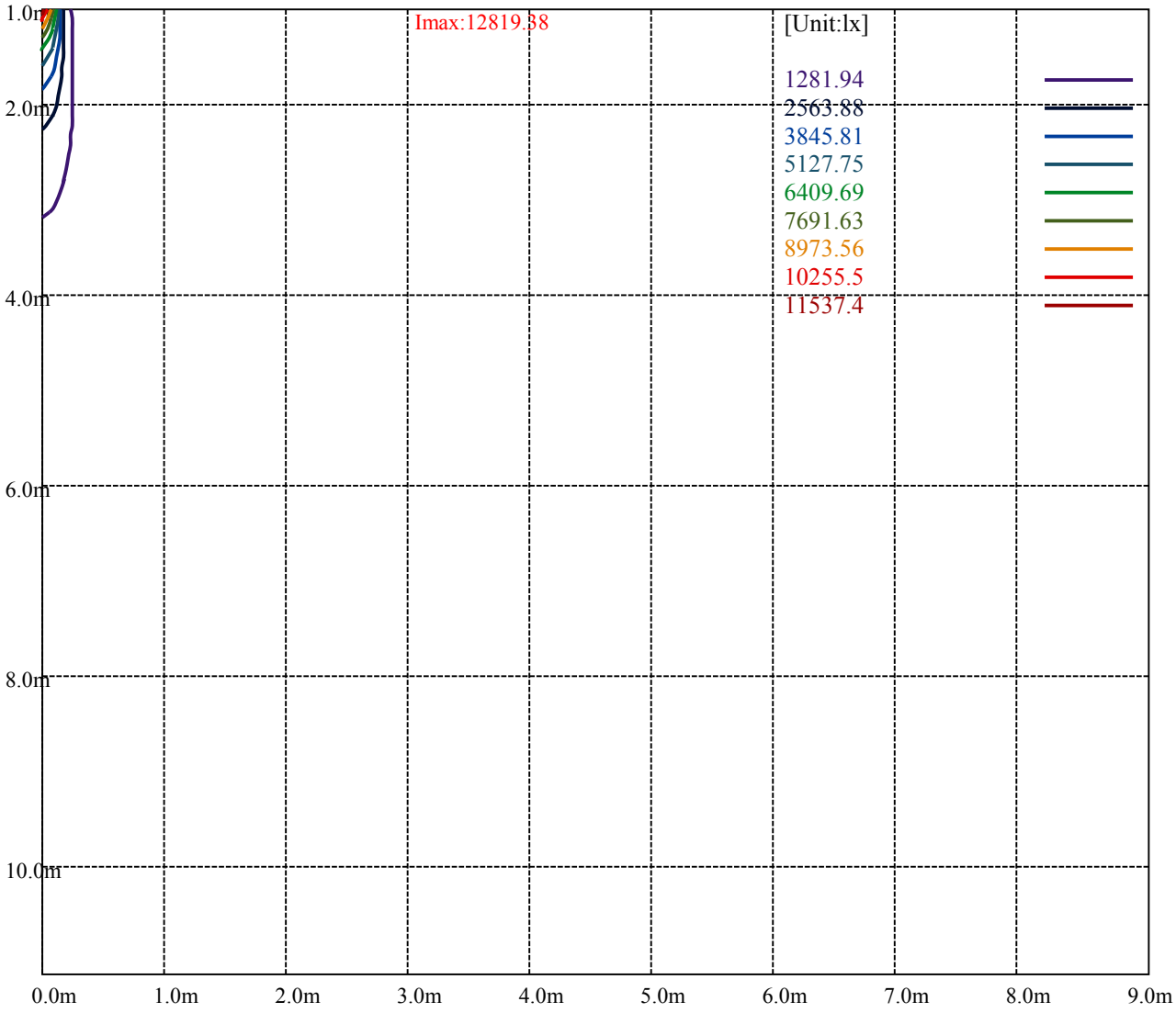

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/8/23
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

## Space ISO Lux diagram






Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/8/23
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

## Luminance Limitting Curve(no luminous side)



Luminance Table

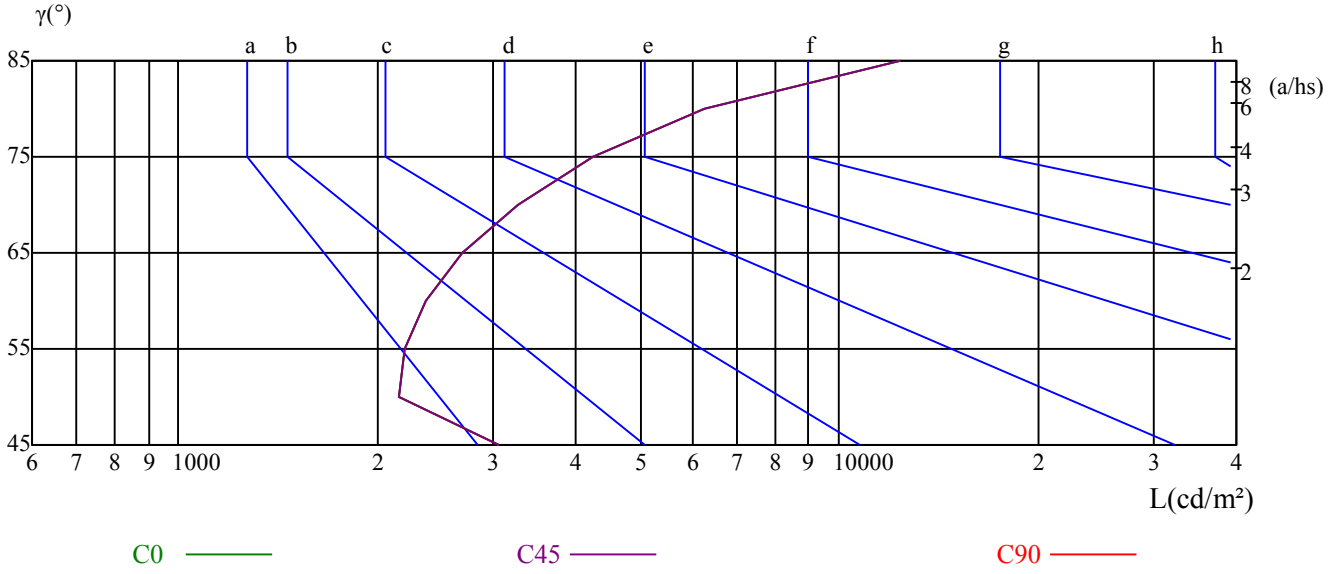
| γ | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 |
|---|---|---|---|---|---|---|---|---|---|
| C0 | 3050 | 2155 | 2207 | 2375 | 2696 | 3256 | 4238 | 6246 | 12380 |
| C45 | 3050 | 2155 | 2207 | 2375 | 2696 | 3256 | 4238 | 6246 | 12380 |
| C90 | 3050 | 2155 | 2207 | 2375 | 2696 | 3256 | 4238 | 6246 | 12380 |

| L(Hor)(65) | L(Ver)(65) | L45(65) | L(Hor)(75) | L(Ver)(75) | L45(75) | L(Hor)(85) | L(Ver)(85) | L45(85) |
|---|---|---|---|---|---|---|---|---|
| 2696 | 2696 | 2696 | 4238 | 4238 | 4238 | 12380 | 12380 | 12380 |

Glare Table

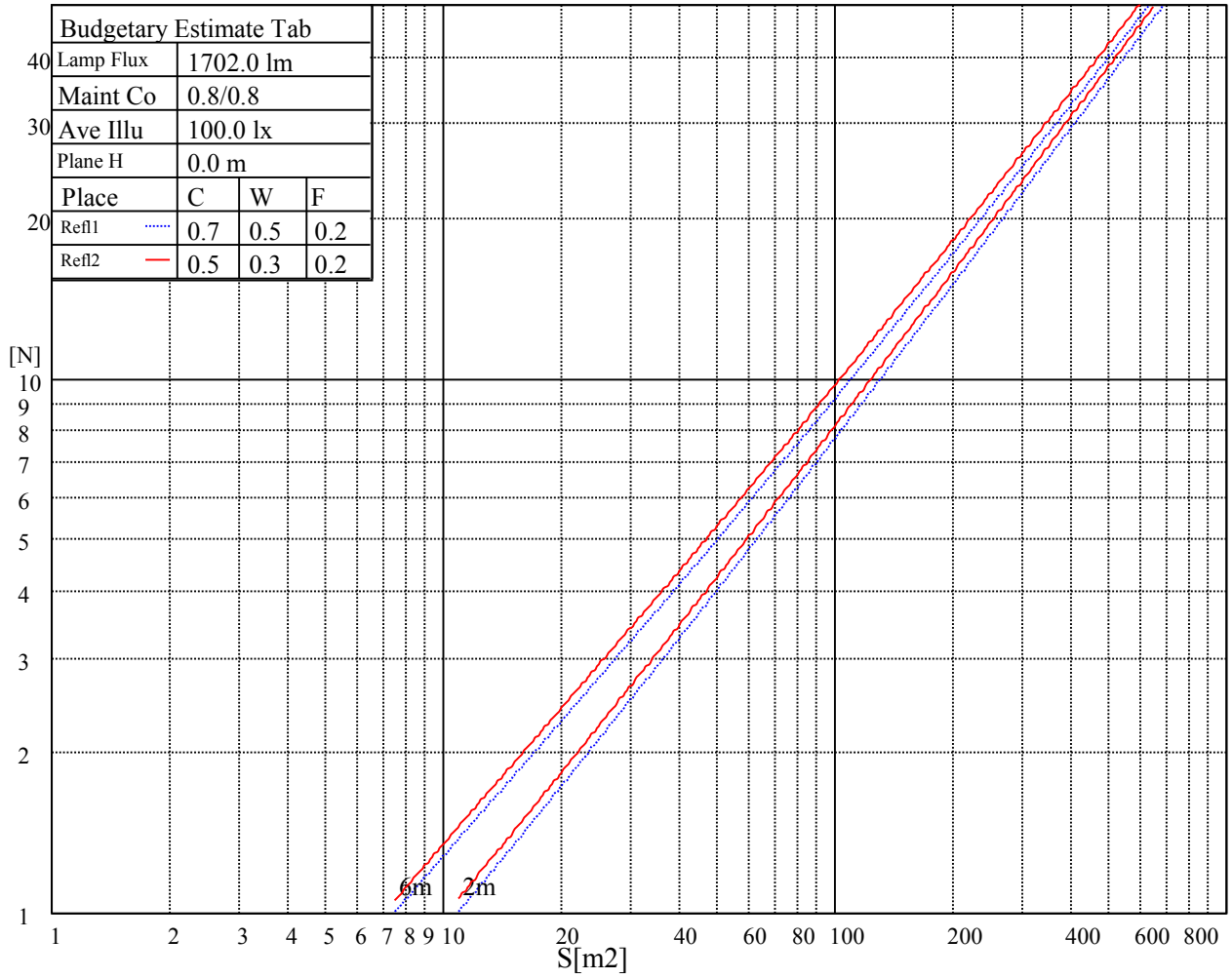
| Glare | Quality | Service Values Illuminance(lx) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1.15 | A | 2000 | 1000 | 500 | <=300 | | | | |
| 1.5 | B | | 2000 | 1000 | 500 | <=300 | | | |
| 1.85 | C | | | 2000 | 1000 | 500 | <=300 | | |
| 2.2 | D | | | | 2000 | 1000 | 500 | <=300 |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

Luminance Limitting Curve



## Budgetary Estimate Table






Equipment: GMS1980 Date: 2019/8/23 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

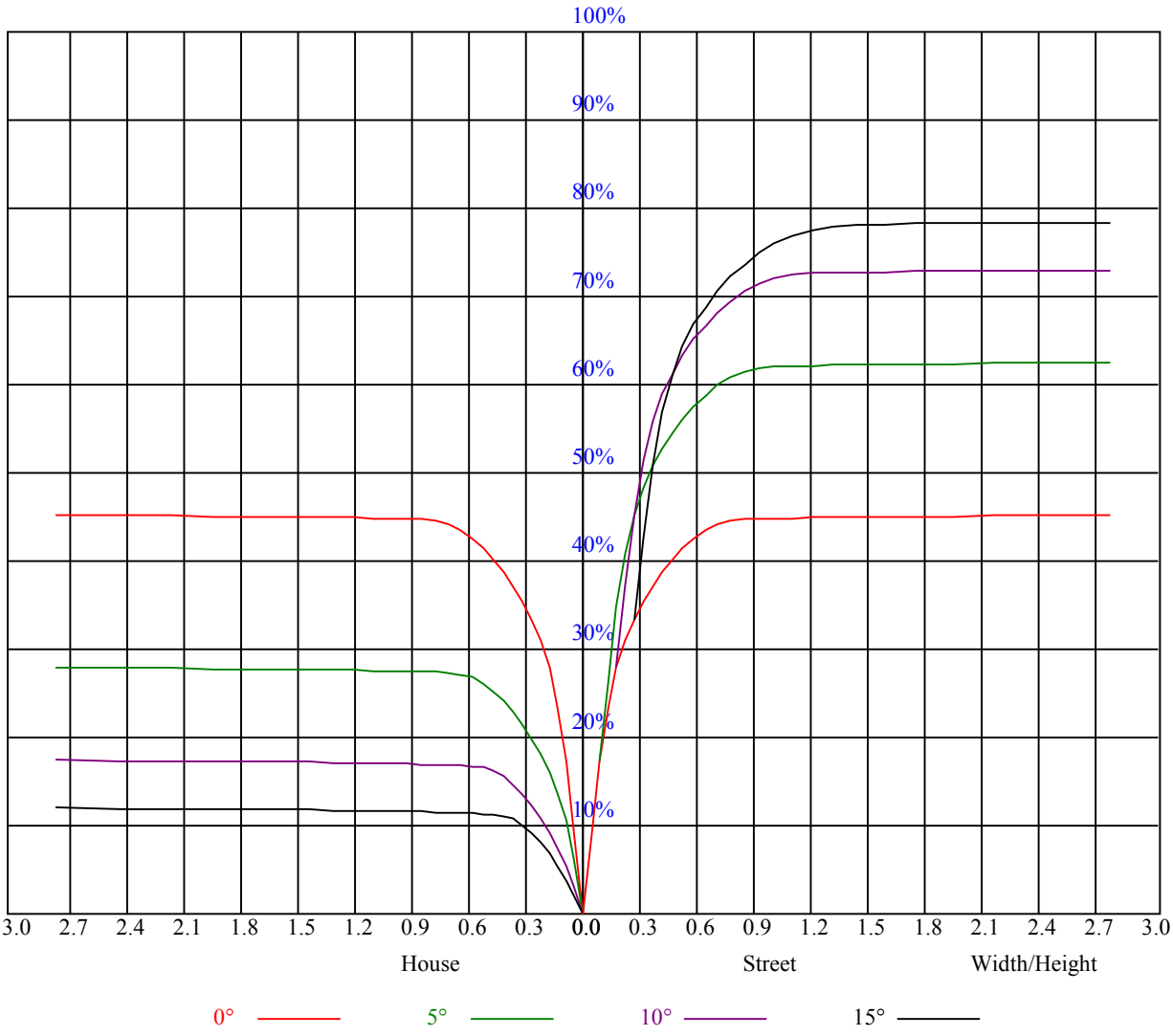
## Utilization factor table for indoor luminaire



| 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 | 1.08 | 1.08 | 1.08 | 1.06 | 1.06 | 1.06 | 1.01 | 1.01 | 1.01 | 0.97 | 0.97 | 0.97 | 0.93 | 0.93 | 0.93 | 0.91 |
| 1 | 1.02 | 1.00 | 0.99 | 1.00 | 0.99 | 0.97 | 0.97 | 0.95 | 0.94 | 0.93 | 0.92 | 0.91 | 0.90 | 0.89 | 0.89 | 0.87 |
| 2 | 0.97 | 0.94 | 0.91 | 0.95 | 0.93 | 0.90 | 0.93 | 0.90 | 0.89 | 0.90 | 0.88 | 0.87 | 0.87 | 0.86 | 0.85 | 0.83 |
| 3 | 0.92 | 0.89 | 0.86 | 0.91 | 0.88 | 0.85 | 0.89 | 0.86 | 0.84 | 0.87 | 0.85 | 0.83 | 0.85 | 0.83 | 0.81 | 0.80 |
| 4 | 0.88 | 0.84 | 0.81 | 0.87 | 0.84 | 0.81 | 0.86 | 0.83 | 0.80 | 0.84 | 0.81 | 0.79 | 0.82 | 0.80 | 0.78 | 0.77 |
| 5 | 0.85 | 0.81 | 0.78 | 0.84 | 0.80 | 0.77 | 0.83 | 0.79 | 0.77 | 0.81 | 0.78 | 0.76 | 0.80 | 0.77 | 0.76 | 0.74 |
| 6 | 0.82 | 0.78 | 0.75 | 0.81 | 0.77 | 0.74 | 0.80 | 0.76 | 0.74 | 0.79 | 0.76 | 0.73 | 0.78 | 0.75 | 0.73 | 0.72 |
| 7 | 0.79 | 0.75 | 0.72 | 0.78 | 0.74 | 0.72 | 0.77 | 0.74 | 0.71 | 0.76 | 0.73 | 0.71 | 0.75 | 0.73 | 0.71 | 0.70 |
| 8 | 0.76 | 0.72 | 0.69 | 0.76 | 0.72 | 0.69 | 0.75 | 0.71 | 0.69 | 0.74 | 0.71 | 0.69 | 0.73 | 0.71 | 0.68 | 0.68 |
| 9 | 0.74 | 0.70 | 0.67 | 0.73 | 0.70 | 0.67 | 0.73 | 0.69 | 0.67 | 0.72 | 0.69 | 0.67 | 0.71 | 0.69 | 0.66 | 0.66 |
| 10 | 0.72 | 0.68 | 0.65 | 0.71 | 0.68 | 0.65 | 0.71 | 0.67 | 0.65 | 0.70 | 0.67 | 0.65 | 0.70 | 0.67 | 0.65 | 0.64 |

## Coefficient Utilization Curve





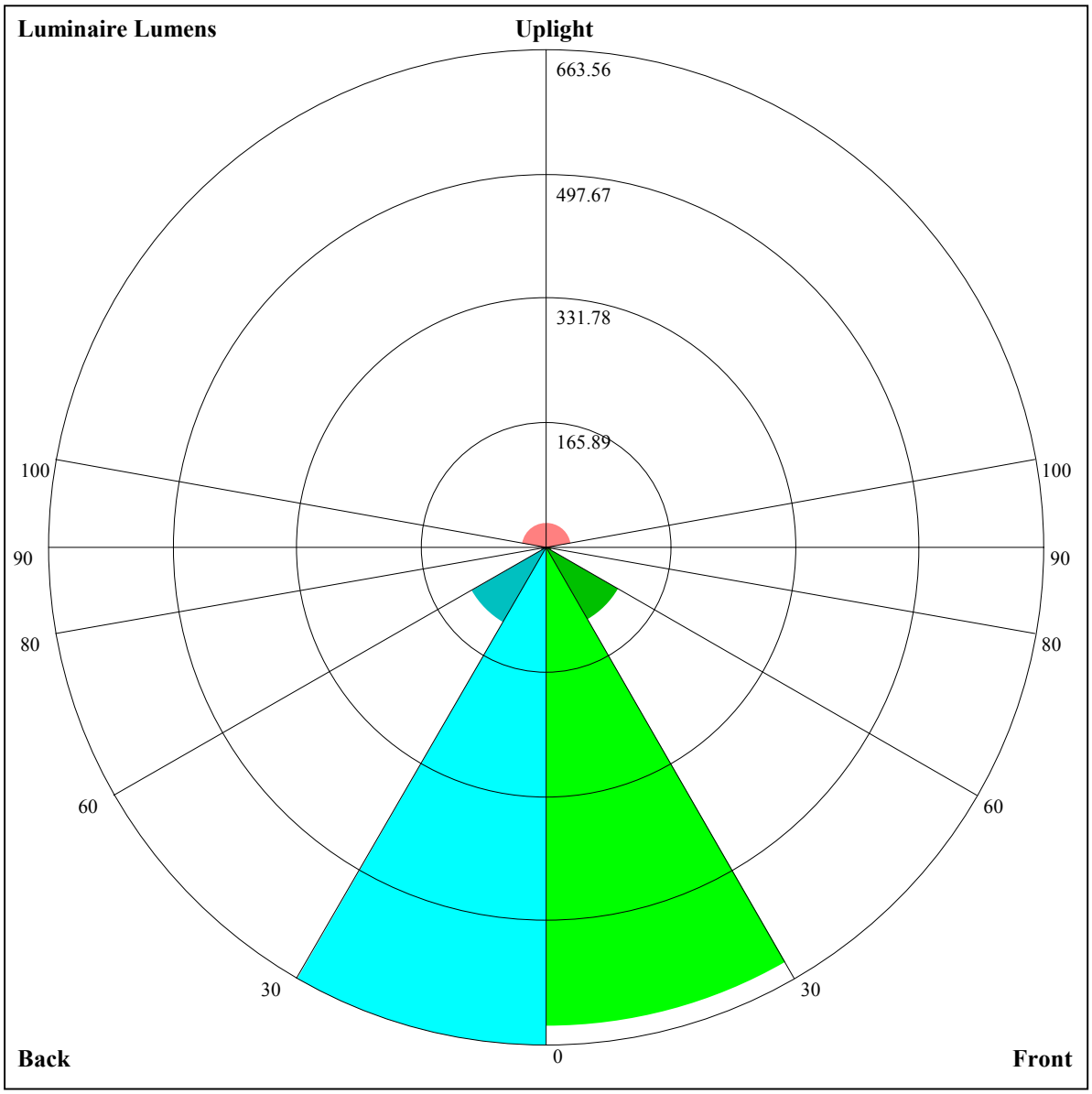

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/8/23
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

LCS Graph






Luminaire Lumens:

FL=640.07,FM=111.82,FH=7.21,FVH=3.72

BL=663.56,BM=116.44,BH=7.23,BVH=3.7

UL=7.36,UH=35.01

BUG Rating:B2-U2-G0

Intensity data(cd)



| C/γ(°) | 0.0 | 1.0 | 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 7.0 | 8.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 12909.38 | 12577.50 | 11868.75 | 10985.63 | 9770.63 | 8572.50 | 7340.63 | 5883.75 | 4843.13 |
| 45.0 | 12785.63 | 12875.63 | 12510.00 | 11790.00 | 10912.50 | 9849.38 | 8370.00 | 7126.88 | 5951.25 |
| 90.0 | 12886.88 | 12898.13 | 12453.75 | 11124.56 | 10751.06 | 9653.63 | 8298.00 | 6916.50 | 5758.88 |
| 135.0 | 12695.63 | 12971.25 | 12746.25 | 12183.75 | 11283.75 | 10288.13 | 9028.13 | 7650.00 | 6457.50 |
| 180.0 | 12909.38 | 12774.38 | 12318.75 | 11067.75 | 10452.94 | 9369.00 | 8016.75 | 6648.75 | 5502.38 |
| 225.0 | 12785.63 | 12279.38 | 11158.31 | 10546.88 | 9285.75 | 8070.75 | 6719.63 | 5457.94 | 4435.88 |
| 270.0 | 12886.88 | 12459.38 | 11688.75 | 10631.25 | 9495.00 | 8280.00 | 6755.63 | 5630.63 | 4595.63 |
| 315.0 | 12695.63 | 12105.00 | 11170.69 | 10133.44 | 8823.38 | 7581.94 | 6259.50 | 5036.06 | 4053.38 |
| 360.0 | 12909.38 | 12577.50 | 11868.75 | 10985.63 | 9770.63 | 8572.50 | 7340.63 | 5883.75 | 4843.13 |

| C/γ(°) | 9.0 | 10.0 | 11.0 | 12.0 | 13.0 | 14.0 | 15.0 | 16.0 | 17.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 3768.75 | 2857.50 | 2499.75 | 1828.13 | 1467.56 | 1265.63 | 1114.88 | 979.88 | 876.38 |
| 45.0 | 4635.00 | 3695.63 | 2868.75 | 2194.88 | 1742.06 | 1467.56 | 1244.25 | 1097.44 | 974.25 |
| 90.0 | 4694.63 | 3520.13 | 2746.13 | 2178.00 | 1709.44 | 1448.44 | 1207.13 | 1098.45 | 978.36 |
| 135.0 | 5236.88 | 4117.50 | 3223.13 | 2930.63 | 1906.88 | 1593.56 | 1361.25 | 1169.44 | 1039.50 |
| 180.0 | 4331.81 | 3301.31 | 2558.25 | 2023.88 | 1592.44 | 1357.31 | 1109.87 | 1032.19 | 920.25 |
| 225.0 | 3509.44 | 2548.69 | 2012.06 | 1644.75 | 1343.25 | 1117.41 | 1040.85 | 940.89 | 843.92 |
| 270.0 | 3442.50 | 2846.25 | 2116.13 | 1727.44 | 1394.44 | 1209.38 | 1070.44 | 946.13 | 858.38 |
| 315.0 | 3179.81 | 2321.44 | 1866.94 | 1556.44 | 1224.56 | 1121.06 | 995.91 | 894.54 | 822.66 |
| 360.0 | 3768.75 | 2857.50 | 2499.75 | 1828.13 | 1467.56 | 1265.63 | 1114.88 | 979.88 | 876.38 |

| C/γ(°) | 18.0 | 19.0 | 20.0 | 21.0 | 22.0 | 23.0 | 24.0 | 25.0 | 26.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 811.13 | 758.81 | 720.56 | 694.13 | 670.50 | 651.94 | 632.25 | 613.13 | 596.81 |
| 45.0 | 873.00 | 801.56 | 750.38 | 710.44 | 682.88 | 660.38 | 635.63 | 616.50 | 600.19 |
| 90.0 | 886.33 | 803.03 | 748.52 | 705.15 | 675.17 | 653.46 | 632.48 | 612.56 | 595.58 |
| 135.0 | 943.88 | 855.00 | 788.63 | 741.38 | 699.75 | 671.06 | 649.69 | 627.19 | 609.75 |
| 180.0 | 846.68 | 785.31 | 742.05 | 703.52 | 674.55 | 654.53 | 633.43 | 612.17 | 594.06 |
| 225.0 | 785.31 | 741.77 | 705.43 | 678.77 | 659.64 | 640.63 | 621.06 | 604.35 | 587.03 |
| 270.0 | 802.69 | 756.00 | 722.25 | 699.75 | 679.50 | 660.38 | 637.88 | 617.06 | 599.63 |
| 315.0 | 775.80 | 733.56 | 704.76 | 679.61 | 655.03 | 638.33 | 618.30 | 597.66 | 584.89 |
| 360.0 | 811.13 | 758.81 | 720.56 | 694.13 | 670.50 | 651.94 | 632.25 | 613.13 | 596.81 |

| C/γ(°) | 27.0 | 28.0 | 29.0 | 30.0 | 31.0 | 32.0 | 33.0 | 34.0 | 35.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 582.75 | 566.44 | 553.50 | 542.25 | 529.88 | 518.63 | 481.50 | 420.75 | 350.44 |
| 45.0 | 581.06 | 565.88 | 551.81 | 538.31 | 526.50 | 517.50 | 507.38 | 466.31 | 403.88 |
| 90.0 | 579.26 | 560.87 | 546.47 | 534.21 | 524.03 | 512.72 | 500.06 | 461.19 | 394.82 |
| 135.0 | 591.19 | 572.06 | 559.69 | 545.63 | 532.13 | 522.00 | 513.56 | 487.13 | 435.38 |
| 180.0 | 577.41 | 559.80 | 545.85 | 534.32 | 522.68 | 512.33 | 488.59 | 439.09 | 378.17 |
| 225.0 | 573.30 | 557.55 | 544.89 | 534.15 | 524.59 | 493.37 | 445.84 | 387.96 | 309.60 |
| 270.0 | 585.00 | 564.75 | 551.81 | 542.25 | 529.31 | 513.00 | 477.00 | 408.94 | 339.75 |
| 315.0 | 571.28 | 552.99 | 543.60 | 533.36 | 523.35 | 491.23 | 440.04 | 372.99 | 299.53 |
| 360.0 | 582.75 | 566.44 | 553.50 | 542.25 | 529.88 | 518.63 | 481.50 | 420.75 | 350.44 |

| C/γ(°) | 36.0 | 37.0 | 38.0 | 39.0 | 40.0 | 41.0 | 42.0 | 43.0 | 44.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 292.50 | 212.85 | 142.48 | 82.97 | 42.13 | 20.98 | 18.17 | 15.41 | 12.60 |
| 45.0 | 328.50 | 284.63 | 200.36 | 132.75 | 74.59 | 36.73 | 19.01 | 16.37 | 13.84 |
| 90.0 | 335.48 | 273.21 | 202.50 | 135.00 | 81.06 | 34.54 | 20.53 | 17.89 | 14.63 |
| 135.0 | 376.88 | 310.50 | 285.75 | 167.01 | 104.29 | 56.53 | 25.88 | 22.67 | 19.86 |
| 180.0 | 317.76 | 245.59 | 181.18 | 114.13 | 59.01 | 29.87 | 25.82 | 22.44 | 19.13 |
| 225.0 | 246.04 | 181.41 | 113.23 | 57.99 | 30.88 | 26.38 | 24.13 | 20.70 | 17.44 |
| 270.0 | 290.81 | 198.45 | 136.52 | 76.50 | 35.27 | 25.54 | 22.95 | 19.74 | 17.27 |
| 315.0 | 233.16 | 161.49 | 105.81 | 53.27 | 25.59 | 21.09 | 18.45 | 14.91 | 12.99 |
| 360.0 | 292.50 | 212.85 | 142.48 | 82.97 | 42.13 | 20.98 | 18.17 | 15.41 | 12.60 |

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 | 11.25 | 9.84 | 9.34 | 9.06 | 8.89 | 8.61 | 8.44 | 8.27 | 8.10 |
| 45.0 | 11.93 | 10.46 | 9.62 | 9.34 | 9.06 | 8.83 | 8.72 | 8.55 | 8.38 |
| 90.0 | 12.54 | 11.19 | 9.73 | 9.45 | 9.17 | 8.94 | 8.78 | 8.61 | 8.44 |
| 135.0 | 16.88 | 14.46 | 11.98 | 9.68 | 9.34 | 9.11 | 8.94 | 8.78 | 8.55 |
| 180.0 | 16.43 | 12.49 | 9.45 | 9.17 | 8.94 | 8.78 | 8.61 | 8.44 | 8.33 |
| 225.0 | 13.95 | 9.56 | 9.23 | 9.06 | 8.83 | 8.61 | 8.49 | 8.33 | 8.16 |
| 270.0 | 14.63 | 9.51 | 9.11 | 8.89 | 8.66 | 8.49 | 8.33 | 8.16 | 7.99 |
| 315.0 | 10.91 | 9.23 | 8.89 | 8.72 | 8.49 | 8.33 | 8.21 | 8.04 | 7.93 |
| 360.0 | 11.25 | 9.84 | 9.34 | 9.06 | 8.89 | 8.61 | 8.44 | 8.27 | 8.10 |

| C/γ(°) | 54.0 | 55.0 | 56.0 | 57.0 | 58.0 | 59.0 | 60.0 | 61.0 | 62.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 7.93 | 7.82 | 7.71 | 7.59 | 7.54 | 7.48 | 7.37 | 7.31 | 7.26 |
| 45.0 | 8.27 | 8.10 | 7.99 | 7.88 | 7.76 | 7.71 | 7.59 | 7.54 | 7.48 |
| 90.0 | 8.27 | 8.16 | 8.04 | 7.88 | 7.82 | 7.71 | 7.59 | 7.54 | 7.48 |
| 135.0 | 8.38 | 8.27 | 8.10 | 7.99 | 7.88 | 7.76 | 7.71 | 7.59 | 7.48 |
| 180.0 | 8.16 | 8.04 | 7.93 | 7.76 | 7.71 | 7.59 | 7.54 | 7.43 | 7.37 |
| 225.0 | 8.04 | 7.88 | 7.76 | 7.65 | 7.59 | 7.48 | 7.37 | 7.31 | 7.26 |
| 270.0 | 7.88 | 7.76 | 7.65 | 7.59 | 7.48 | 7.43 | 7.31 | 7.26 | 7.20 |
| 315.0 | 7.76 | 7.65 | 7.54 | 7.48 | 7.37 | 7.31 | 7.26 | 7.20 | 7.14 |
| 360.0 | 7.93 | 7.82 | 7.71 | 7.59 | 7.54 | 7.48 | 7.37 | 7.31 | 7.26 |

| C/γ(°) | 63.0 | 64.0 | 65.0 | 66.0 | 67.0 | 68.0 | 69.0 | 70.0 | 71.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 7.20 | 7.14 | 7.09 | 7.09 | 7.03 | 7.03 | 6.98 | 6.98 | 6.98 |
| 45.0 | 7.37 | 7.31 | 7.31 | 7.20 | 7.20 | 7.14 | 7.14 | 7.09 | 7.09 |
| 90.0 | 7.43 | 7.31 | 7.26 | 7.26 | 7.20 | 7.14 | 7.09 | 7.09 | 7.03 |
| 135.0 | 7.43 | 7.37 | 7.31 | 7.26 | 7.20 | 7.14 | 7.14 | 7.09 | 7.03 |
| 180.0 | 7.31 | 7.26 | 7.14 | 7.14 | 7.09 | 7.03 | 7.03 | 6.98 | 6.98 |
| 225.0 | 7.20 | 7.14 | 7.09 | 7.09 | 7.03 | 6.98 | 6.98 | 6.98 | 6.92 |
| 270.0 | 7.14 | 7.14 | 7.09 | 7.03 | 7.03 | 6.98 | 6.98 | 6.92 | 6.92 |
| 315.0 | 7.09 | 7.03 | 7.03 | 6.98 | 6.98 | 6.98 | 6.98 | 6.92 | 6.92 |
| 360.0 | 7.20 | 7.14 | 7.09 | 7.09 | 7.03 | 7.03 | 6.98 | 6.98 | 6.98 |

| C/γ(°) | 72.0 | 73.0 | 74.0 | 75.0 | 76.0 | 77.0 | 78.0 | 79.0 | 80.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 6.98 | 6.92 | 6.92 | 6.92 | 6.92 | 6.86 | 6.86 | 6.86 | 6.86 |
| 45.0 | 7.03 | 7.03 | 6.98 | 6.98 | 6.98 | 6.98 | 6.92 | 6.92 | 6.86 |
| 90.0 | 7.03 | 6.98 | 6.98 | 6.92 | 6.92 | 6.92 | 6.86 | 6.92 | 6.86 |
| 135.0 | 7.03 | 6.98 | 6.98 | 6.98 | 6.92 | 6.86 | 6.86 | 6.86 | 6.81 |
| 180.0 | 6.92 | 6.92 | 6.92 | 6.86 | 6.86 | 6.86 | 6.81 | 6.81 | 6.81 |
| 225.0 | 6.92 | 6.92 | 6.86 | 6.86 | 6.86 | 6.86 | 6.86 | 6.86 | 6.81 |
| 270.0 | 6.86 | 6.86 | 6.86 | 6.86 | 6.86 | 6.86 | 6.86 | 6.81 | 6.81 |
| 315.0 | 6.86 | 6.86 | 6.86 | 6.81 | 6.86 | 6.81 | 6.81 | 6.81 | 6.75 |
| 360.0 | 6.98 | 6.92 | 6.92 | 6.92 | 6.92 | 6.86 | 6.86 | 6.86 | 6.86 |

| C/γ(°) | 81.0 | 82.0 | 83.0 | 84.0 | 85.0 | 86.0 | 87.0 | 88.0 | 89.0 |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 6.86 | 6.86 | 6.81 | 6.81 | 6.81 | 6.86 | 6.92 | 6.75 | 6.69 |
| 45.0 | 6.86 | 6.86 | 6.86 | 6.86 | 6.86 | 6.86 | 6.92 | 7.03 | 6.81 |
| 90.0 | 6.86 | 6.86 | 6.81 | 6.81 | 6.81 | 6.86 | 6.92 | 6.75 | 6.75 |
| 135.0 | 6.81 | 6.81 | 6.81 | 6.75 | 6.81 | 6.81 | 6.75 | 6.75 | 6.75 |
| 180.0 | 6.75 | 6.75 | 6.75 | 6.75 | 6.75 | 6.75 | 6.69 | 6.69 | 6.69 |
| 225.0 | 6.81 | 6.81 | 6.81 | 6.81 | 6.75 | 6.81 | 6.81 | 6.75 | 6.75 |
| 270.0 | 6.81 | 6.81 | 6.81 | 6.81 | 6.75 | 6.75 | 6.81 | 6.75 | 6.75 |
| 315.0 | 6.81 | 6.75 | 6.81 | 6.75 | 6.75 | 6.75 | 6.75 | 6.75 | 6.69 |
| 360.0 | 6.86 | 6.86 | 6.81 | 6.81 | 6.81 | 6.86 | 6.92 | 6.75 | 6.69 |

Intensity data(cd)



| C/γ(°) | 90.0 |
|---|---|
| 0.0 | 6.69 |
| 45.0 | 6.81 |
| 90.0 | 6.75 |
| 135.0 | 6.75 |
| 180.0 | 6.69 |
| 225.0 | 6.75 |
| 270.0 | 6.75 |
| 315.0 | 6.75 |
| 360.0 | 6.69 |