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Nata

| | |
|-----------------------------|---------------------|
| LumCAT: 4-2275-M | |
| Luminaire: 92.70.135.00 | |
| Report No: NATA0100 | Voltage(V): 33.8000 |
| Test No: GC2018062012 | Current(A): 0.4900 |
| LampCAT: NICHIA NFCW108B-V3 | Power (W): 16.5620 |
| Lamp flux(lm): 2207.0 | PF: 0.0000 |
| Number of Lamps: 1 | Ballast type: DC |
| Length(mm): 100 | Width(mm): 100 |
| Phm Type: C | Height(mm): 0 |

Photometric Results

Lumens(lm): 2020.20
Efficiency(%): 91.54%
Lumens(lm)/Power(W): 121.98
Central intensity(cd): 9703.003
Maximum intensity(cd): 9703.003
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=20.7
 [C90/270]Total=20.7
Field angle(10%Imax): [C0/180]Total=41.9
 [C90/270]Total=41.9
Maximum s/h(1/2): C0_180=0.35 C90_270=0.35
Maximum s/h(1/4): C0_180=0.35 C90_270=0.35
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 94.08%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 96.102%

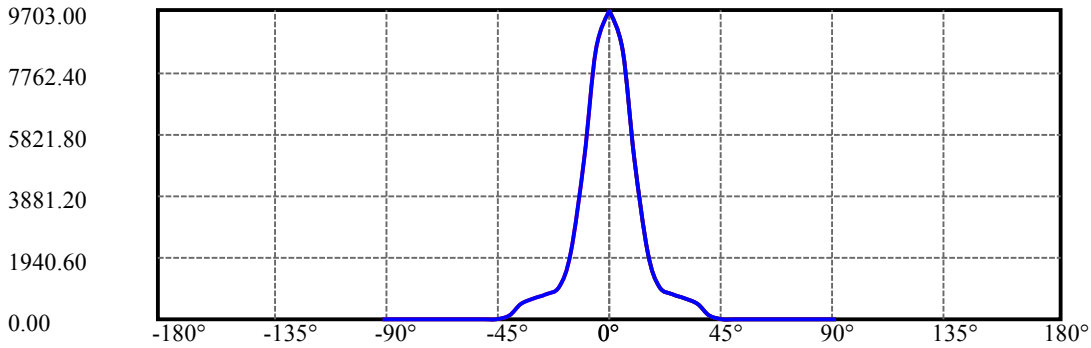
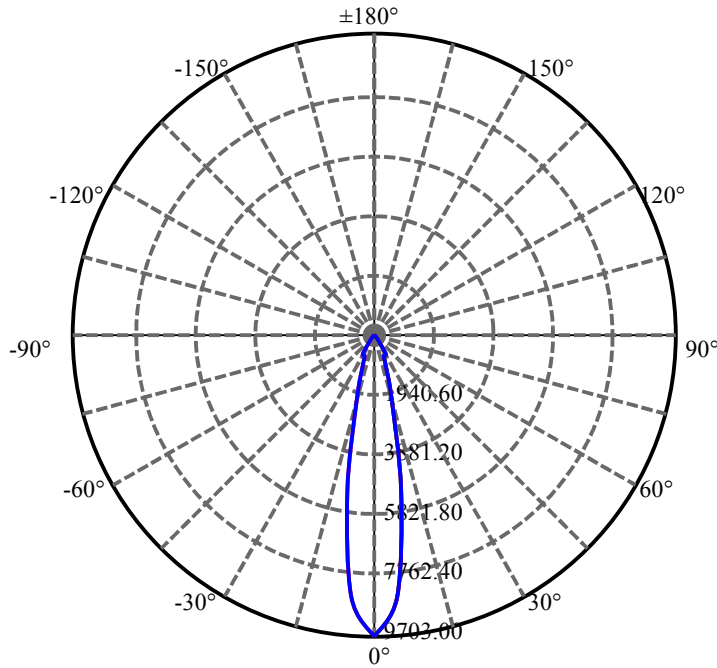
| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 0.0 | 9703.002 | 58.026 | 58.026 | 2.629% | 2.872% |
| 5.0 | 8419.706 | 402.237 | 460.263 | 18.226% | 22.783% |
| 10.0 | 5067.529 | 482.343 | 942.606 | 21.855% | 46.659% |
| 15.0 | 2086.651 | 296.030 | 1238.636 | 13.413% | 61.313% |
| 20.0 | 1022.060 | 191.610 | 1430.246 | 8.682% | 70.797% |
| 25.0 | 755.684 | 175.056 | 1605.302 | 7.932% | 79.463% |
| 30.0 | 688.983 | 188.829 | 1794.131 | 8.556% | 88.810% |
| 35.0 | 484.586 | 152.353 | 1946.484 | 6.903% | 96.351% |
| 40.0 | 92.846 | 32.713 | 1979.197 | 1.482% | 97.970% |
| 45.0 | 10.419 | 4.038 | 1983.235 | .183% | 98.170% |
| 50.0 | 9.339 | 3.921 | 1987.156 | .178% | 98.365% |
| 55.0 | 8.981 | 4.033 | 1991.189 | .183% | 98.564% |
| 60.0 | 8.788 | 4.172 | 1995.361 | .189% | 98.771% |
| 65.0 | 8.671 | 4.308 | 1999.669 | .195% | 98.984% |
| 70.0 | 8.609 | 4.435 | 2004.103 | .201% | 99.203% |
| 75.0 | 8.541 | 4.522 | 2008.625 | .205% | 99.427% |
| 80.0 | 8.527 | 4.603 | 2013.228 | .209% | 99.655% |
| 85.0 | 8.506 | 4.645 | 2017.873 | .210% | 99.885% |
| 90.0 | 8.479 | 2.324 | 2020.197 | .105% | 100.000% |

ZONAL LUMEN SUMMARY

| Zone | Lumens | %Lamp | %Fixt |
|---------|---------|--------|---------|
| 0-30 | 1794.13 | 81.29% | 88.81% |
| 0-40 | 1979.20 | 89.68% | 97.97% |
| 0-60 | 1995.36 | 90.41% | 98.77% |
| 0-90 | 2017.87 | 91.43% | 99.88% |
| 0-120 | 2017.87 | 91.43% | 99.88% |
| 0-180 | 2020.20 | 91.54% | 100.00% |
| 60-90 | 26.68 | 1.21% | 1.32% |
| 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% |
| 0-25.29 | 1616.16 | 73.23% | 80.00% |

ZONAL LUMEN SUMMARY

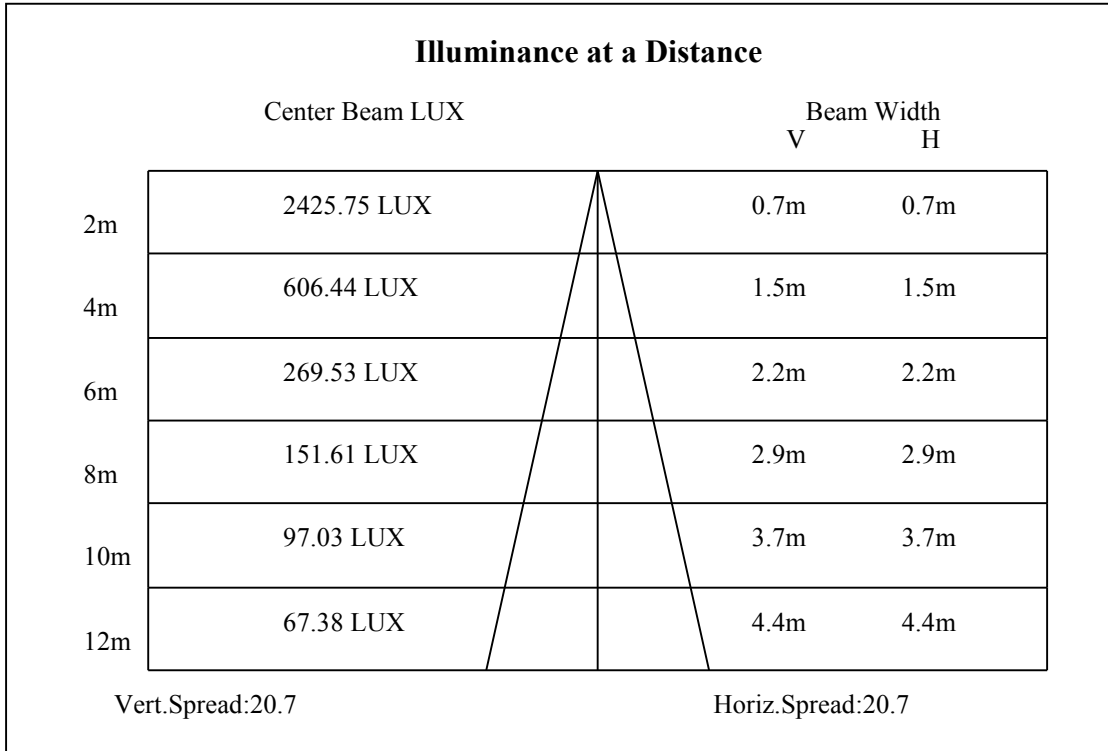
| | |
|---------|--------|
| 0-10 | 942.61 |
| 10-20 | 487.64 |
| 20-30 | 363.88 |
| 30-40 | 185.07 |
| 40-50 | 7.96 |
| 50-60 | 8.20 |
| 60-70 | 8.74 |
| 70-80 | 9.12 |
| 80-90 | 4.64 |
| 90-100 | 0.00 |
| 100-110 | 0.00 |
| 110-120 | 0.00 |
| 120-130 | 0.00 |
| 130-140 | 0.00 |
| 140-150 | 0.00 |
| 150-160 | 0.00 |
| 160-170 | 0.00 |
| 170-180 | 0.00 |

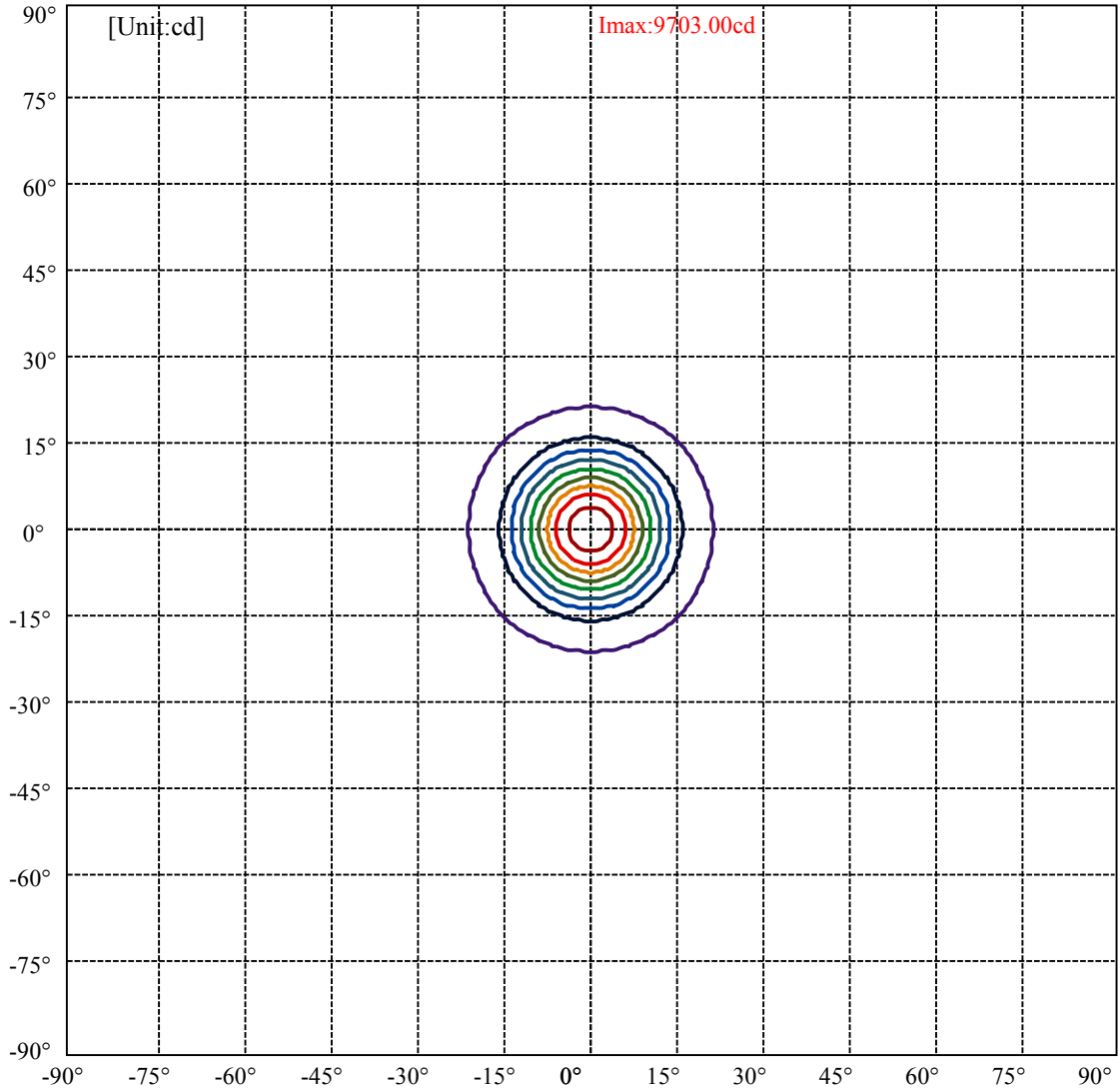


C0(Max): —————
C0/C180: —————
C90/C270: —————

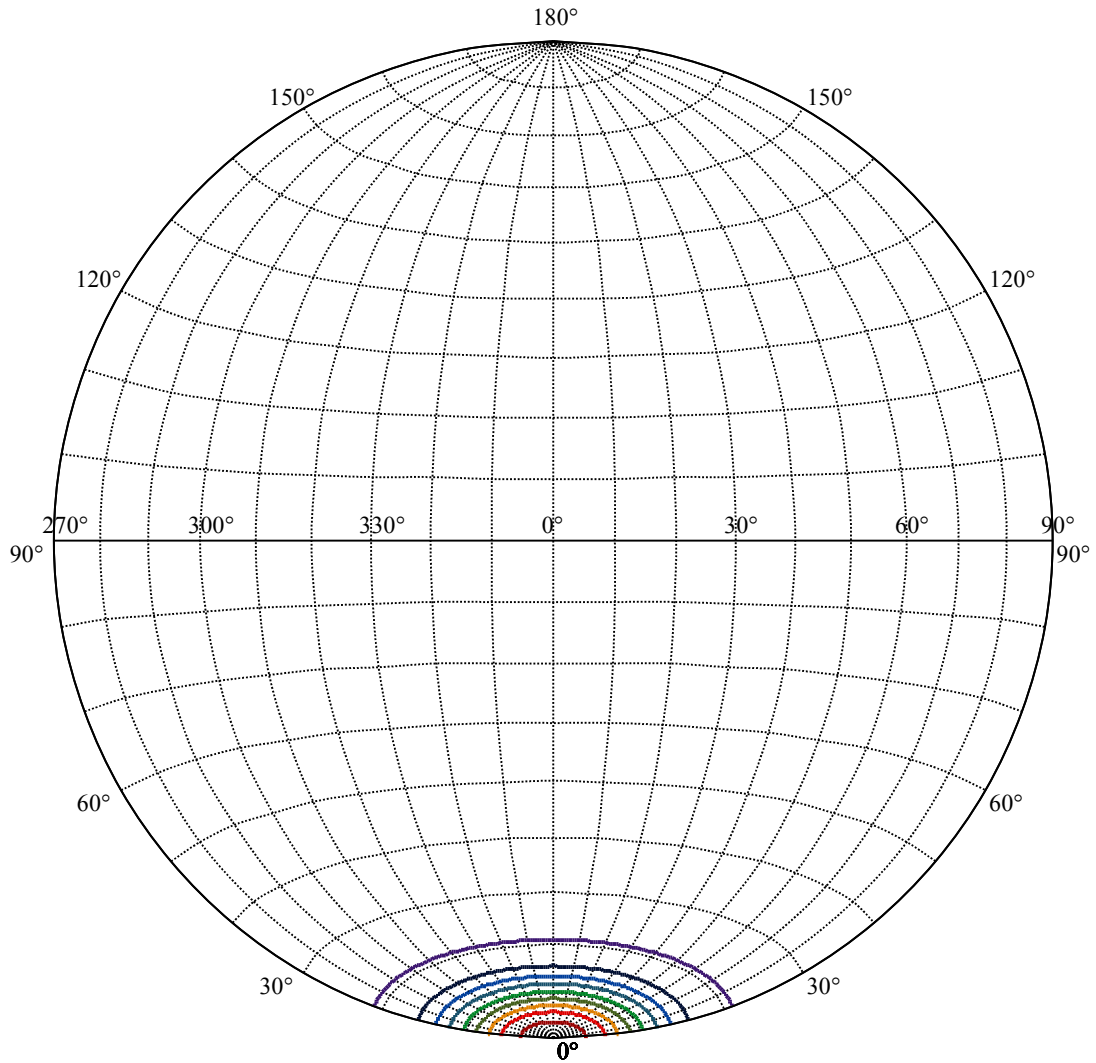
Field angle(10%Imax):C0/180Left:21.0 Right:21.0
:C90/270Left:21.0 Right:21.0

Beam Angle(50%Imax):C0/180Left:10.4 Right:10.4
:C90/270Left:10.4 Right:10.4





| | |
|------------------|---|
| (10%Imax) 970.3 | — |
| (20%Imax) 1940.6 | — |
| (30%Imax) 2910.9 | — |
| (40%Imax) 3881.2 | — |
| (50%Imax) 4851.5 | — |
| (60%Imax) 5821.8 | — |
| (70%Imax) 6792.1 | — |
| (80%Imax) 7762.4 | — |
| (90%Imax) 8732.7 | — |



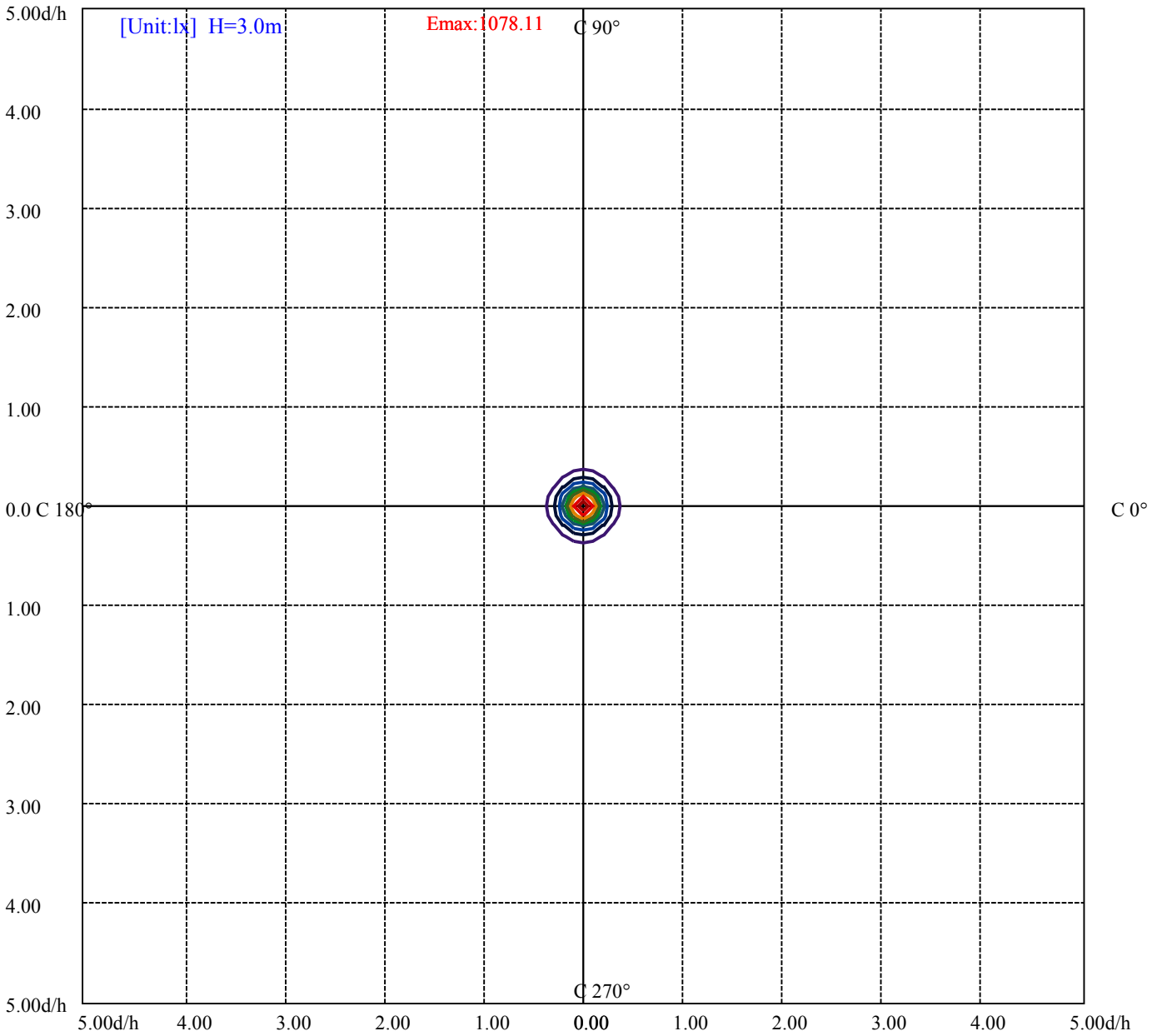
House

[Unit:cd]

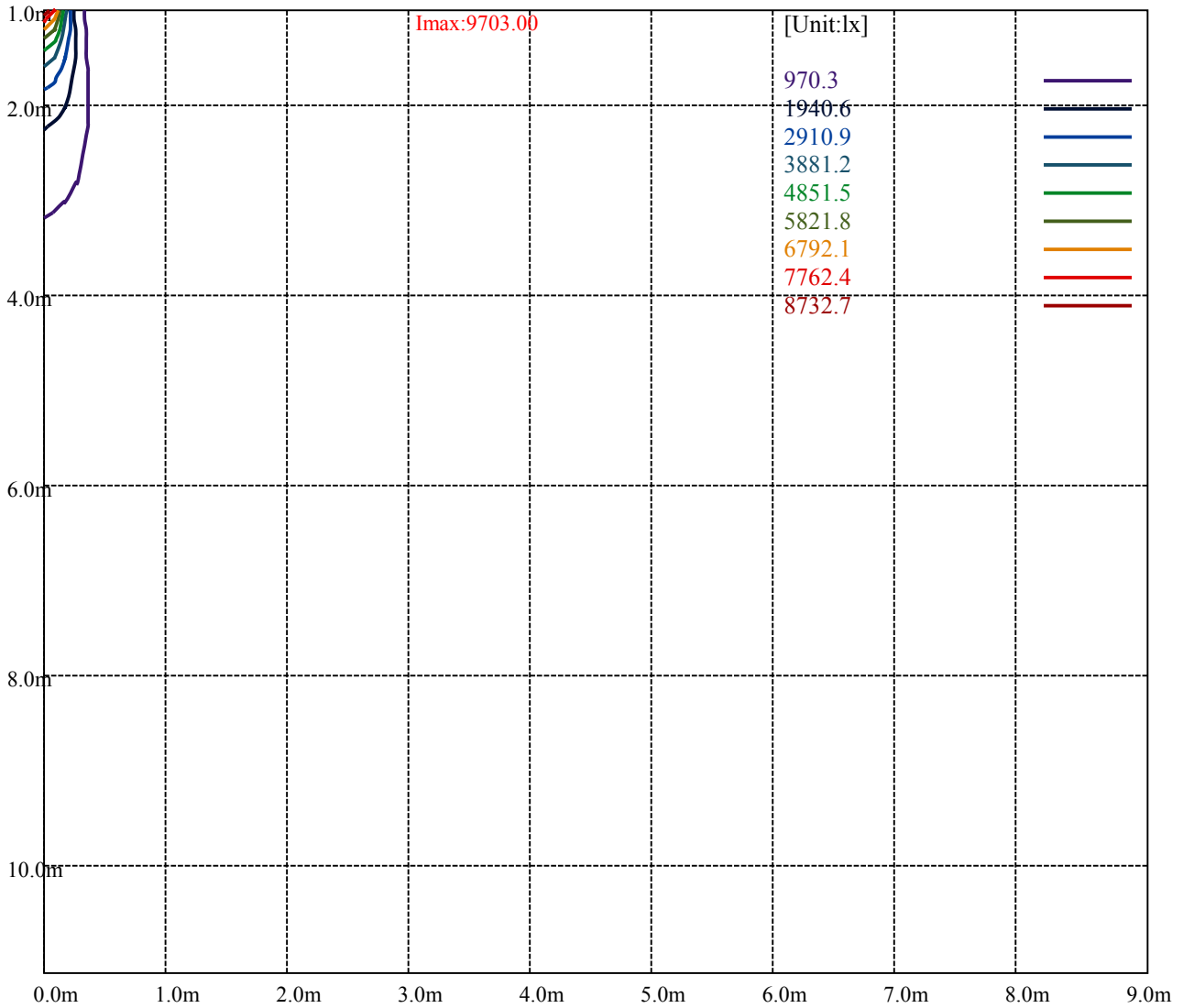
Road

Imax:9703.00

| | |
|------------------|---|
| (10%Imax) 970.3 | — |
| (20%Imax) 1940.6 | — |
| (30%Imax) 2910.9 | — |
| (40%Imax) 3881.2 | — |
| (50%Imax) 4851.5 | — |
| (60%Imax) 5821.8 | — |
| (70%Imax) 6792.1 | — |
| (80%Imax) 7762.4 | — |
| (90%Imax) 8732.7 | — |



| | |
|--------------------|---|
| (10%Emax) 107.8107 | — |
| (20%Emax) 215.6211 | — |
| (30%Emax) 323.4322 | — |
| (40%Emax) 431.2433 | — |
| (50%Emax) 539.0533 | — |
| (60%Emax) 646.8644 | — |
| (70%Emax) 754.6744 | — |
| (80%Emax) 862.4856 | — |
| (90%Emax) 970.2966 | — |



Luminance Table

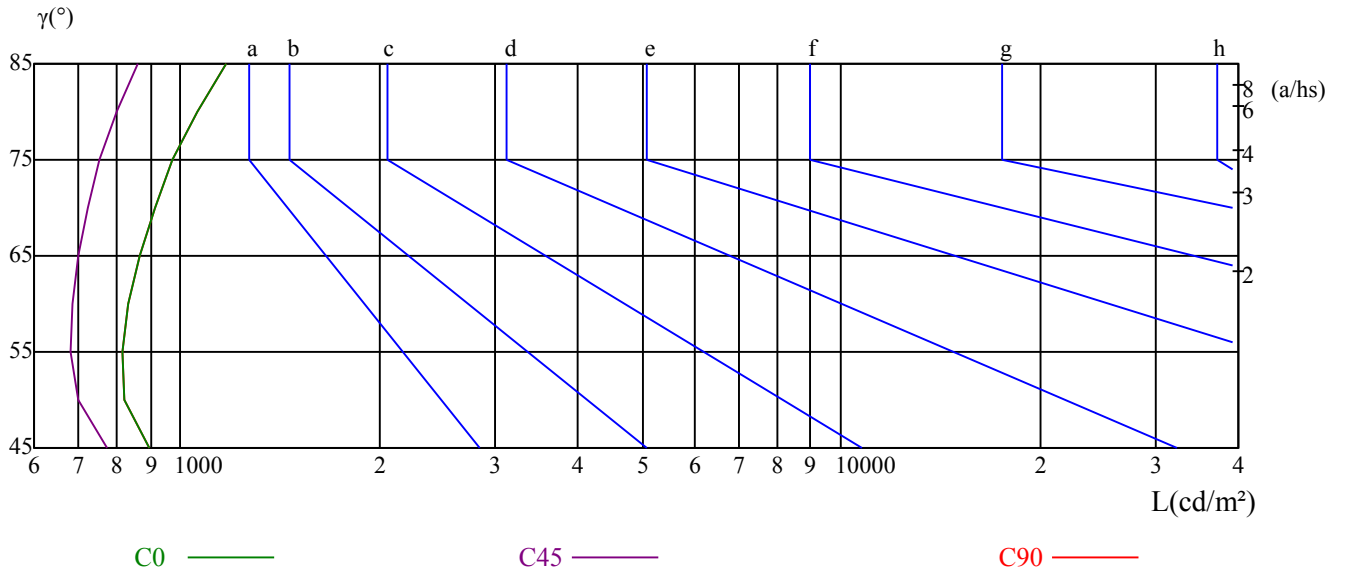
| γ | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 |
|----------|-----|-----|-----|-----|-----|-----|-----|------|------|
| C0 | 898 | 824 | 818 | 834 | 865 | 913 | 974 | 1061 | 1174 |
| C45 | 773 | 699 | 683 | 685 | 698 | 722 | 754 | 801 | 860 |
| C90 | 898 | 824 | 818 | 834 | 865 | 913 | 974 | 1061 | 1174 |

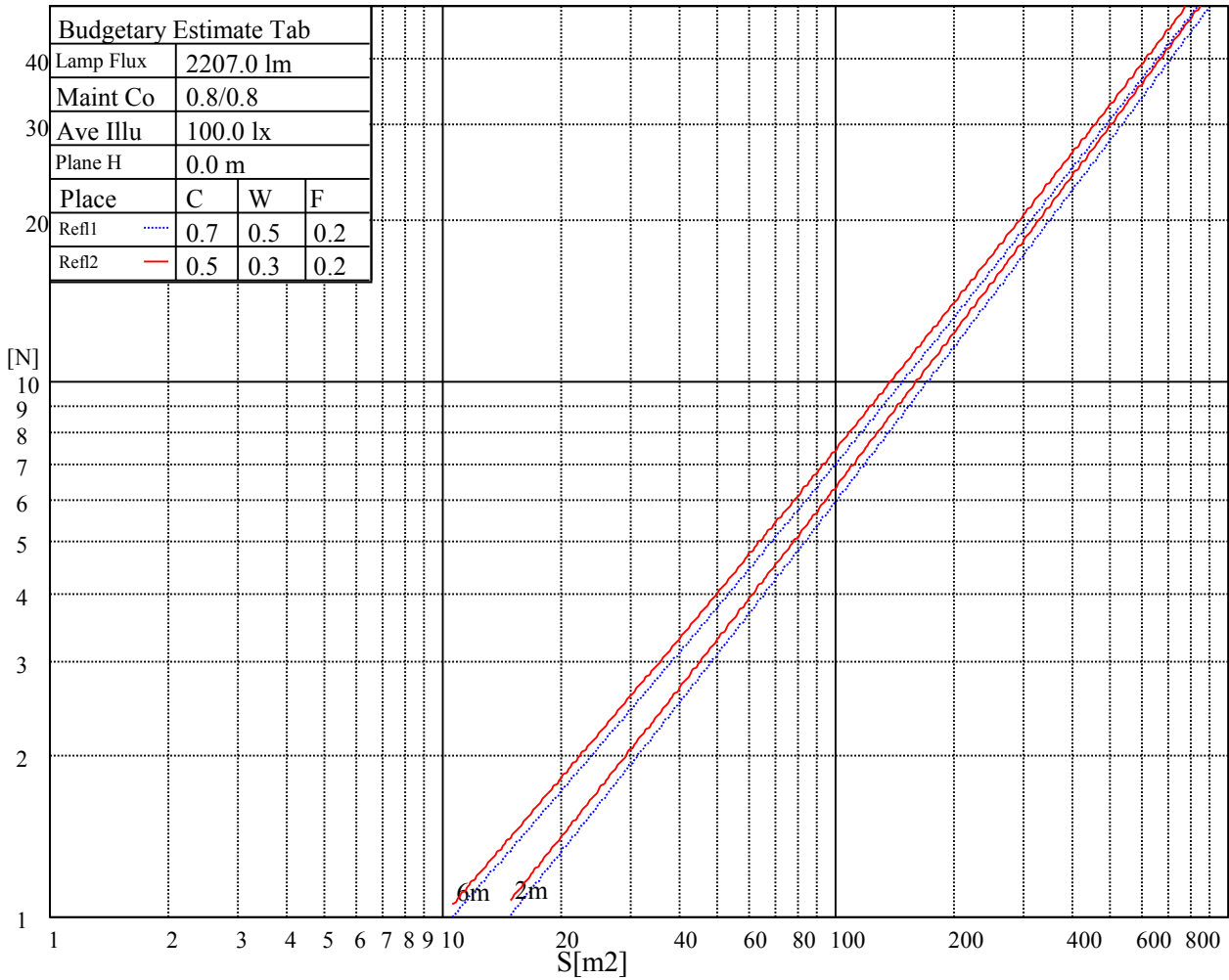
| L(Hor)(65) | L(Ver)(65) | L45(65) | L(Hor)(75) | L(Ver)(75) | L45(75) | L(Hor)(85) | L(Ver)(85) | L45(85) |
|------------|------------|---------|------------|------------|---------|------------|------------|---------|
| 2052 | 2052 | 2052 | 3300 | 3300 | 3300 | 9760 | 9760 | 9760 |

Glare Table

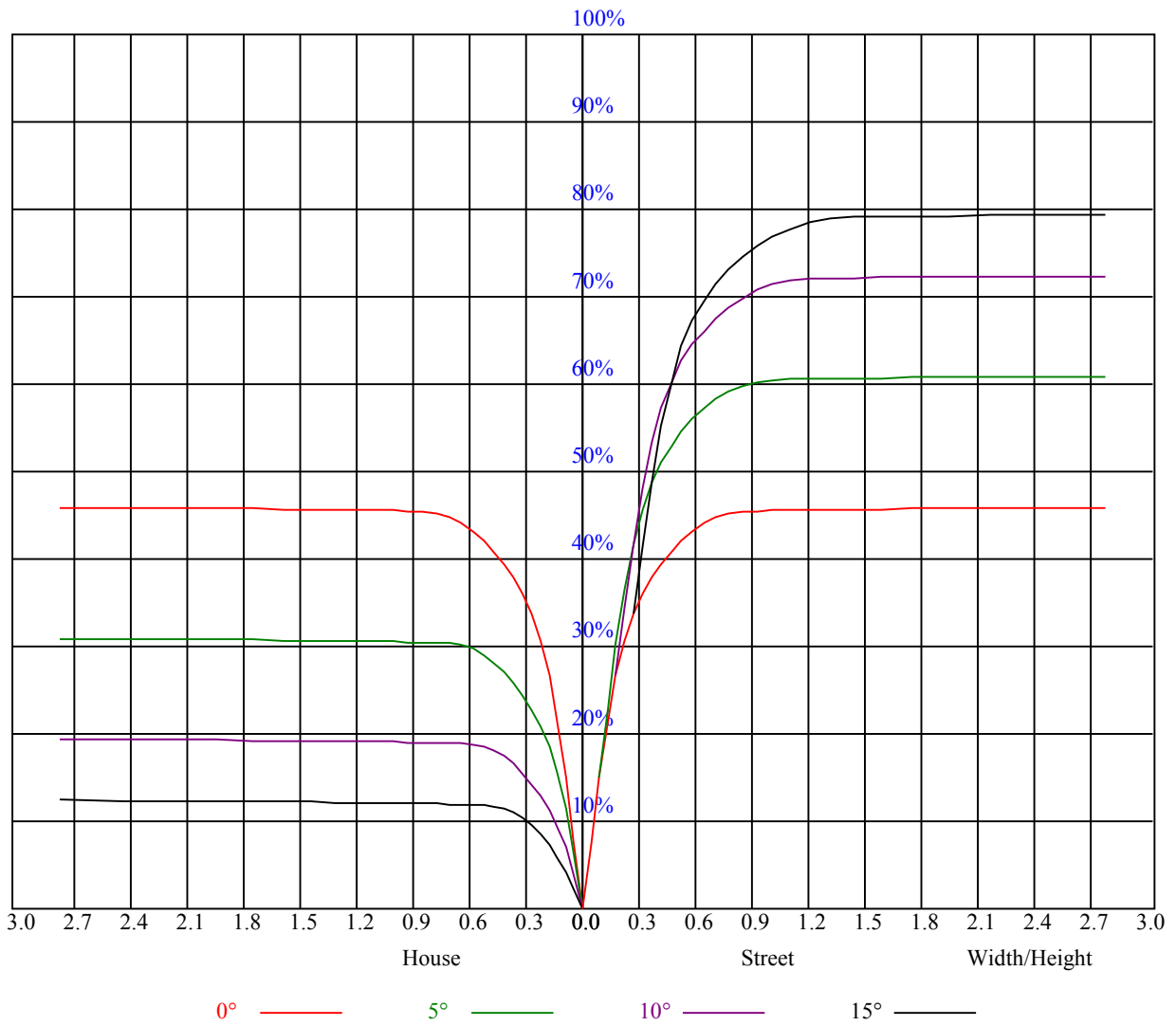
| Glare | Quality | Service Values Illuminance(lx) | | | | | | | |
|-------|---------|--------------------------------|------|------|-------|-------|-------|-------|-------|
| 1.15 | A | 2000 | 1000 | 500 | <=300 | | | | |
| 1.5 | B | | 2000 | 1000 | 500 | <=300 | | | |
| 1.85 | C | | | 2000 | 1000 | 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 Limiting Curve





| 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 | COEFFICIENTS OF UTILIZATION RHOFC=20 CU | | | | | | | | | | | | | | | |
| 0 | 1.12 | 1.12 | 1.12 | 1.09 | 1.09 | 1.09 | 1.05 | 1.05 | 1.05 | 1.00 | 1.00 | 1.00 | 0.96 | 0.96 | 0.96 | 0.94 |
| 1 | 1.02 | 1.00 | 0.97 | 1.00 | 0.98 | 0.96 | 0.96 | 0.94 | 0.93 | 0.93 | 0.91 | 0.90 | 0.90 | 0.88 | 0.87 | 0.85 |
| 2 | 0.97 | 0.94 | 0.90 | 0.96 | 0.92 | 0.89 | 0.93 | 0.90 | 0.87 | 0.90 | 0.88 | 0.86 | 0.87 | 0.85 | 0.84 | 0.82 |
| 3 | 0.93 | 0.89 | 0.85 | 0.92 | 0.88 | 0.85 | 0.89 | 0.86 | 0.83 | 0.87 | 0.84 | 0.82 | 0.85 | 0.83 | 0.81 | 0.79 |
| 4 | 0.89 | 0.85 | 0.81 | 0.88 | 0.84 | 0.81 | 0.86 | 0.83 | 0.80 | 0.84 | 0.81 | 0.79 | 0.83 | 0.80 | 0.78 | 0.77 |
| 5 | 0.86 | 0.81 | 0.78 | 0.85 | 0.81 | 0.77 | 0.83 | 0.80 | 0.77 | 0.82 | 0.79 | 0.76 | 0.80 | 0.78 | 0.76 | 0.74 |
| 6 | 0.83 | 0.78 | 0.75 | 0.82 | 0.78 | 0.75 | 0.81 | 0.77 | 0.74 | 0.79 | 0.76 | 0.74 | 0.78 | 0.75 | 0.73 | 0.72 |
| 7 | 0.80 | 0.75 | 0.72 | 0.79 | 0.75 | 0.72 | 0.78 | 0.75 | 0.72 | 0.77 | 0.74 | 0.71 | 0.76 | 0.73 | 0.71 | 0.70 |
| 8 | 0.77 | 0.73 | 0.70 | 0.77 | 0.73 | 0.70 | 0.76 | 0.72 | 0.70 | 0.75 | 0.72 | 0.69 | 0.74 | 0.71 | 0.69 | 0.68 |
| 9 | 0.75 | 0.71 | 0.68 | 0.75 | 0.71 | 0.68 | 0.74 | 0.70 | 0.68 | 0.73 | 0.70 | 0.68 | 0.73 | 0.70 | 0.67 | 0.66 |
| 10 | 0.73 | 0.69 | 0.66 | 0.73 | 0.69 | 0.66 | 0.72 | 0.69 | 0.66 | 0.71 | 0.68 | 0.66 | 0.71 | 0.68 | 0.66 | 0.65 |



Intensity data(cd)

| | | | | | | | | | |
|--------|---------|---------|---------|---------|---------|--------|--------|--------|--------|
| C/γ(°) | 0.0 | 5.0 | 10.0 | 15.0 | 20.0 | 25.0 | 30.0 | 35.0 | 40.0 |
| 0.0 | 9769.76 | 8562.37 | 5361.94 | 2223.73 | 1111.59 | 775.19 | 701.97 | 558.82 | 150.58 |
| 45.0 | 9725.71 | 7641.28 | 4052.70 | 1753.00 | 884.76 | 728.40 | 674.99 | 363.37 | 18.00 |
| 90.0 | 9575.96 | 7270.20 | 3621.06 | 1096.83 | 823.15 | 715.51 | 658.53 | 277.15 | 15.03 |
| 135.0 | 9740.58 | 8500.71 | 4776.69 | 1884.58 | 946.42 | 735.00 | 676.64 | 443.20 | 33.03 |
| 180.0 | 9769.76 | 8364.17 | 4550.41 | 1778.32 | 919.00 | 726.58 | 669.32 | 448.16 | 29.68 |
| 225.0 | 9725.71 | 9237.36 | 6082.08 | 2668.03 | 1077.78 | 781.25 | 701.69 | 601.49 | 148.87 |
| 270.0 | 9575.96 | 9220.30 | 6910.13 | 3042.97 | 1343.38 | 812.63 | 725.09 | 654.07 | 282.99 |
| 315.0 | 9740.58 | 8561.27 | 5185.21 | 2245.75 | 1070.41 | 770.90 | 703.62 | 530.41 | 64.58 |
| 360.0 | 9769.76 | 8562.37 | 5361.94 | 2223.73 | 1111.59 | 775.19 | 701.97 | 558.82 | 150.58 |
| C/γ(°) | 45.0 | 50.0 | 55.0 | 60.0 | 65.0 | 70.0 | 75.0 | 80.0 | 85.0 |
| 0.0 | 10.19 | 9.41 | 9.03 | 8.81 | 8.70 | 8.64 | 8.59 | 8.59 | 8.53 |
| 45.0 | 9.58 | 9.14 | 8.86 | 8.70 | 8.64 | 8.53 | 8.48 | 8.48 | 8.42 |
| 90.0 | 9.58 | 9.14 | 8.86 | 8.75 | 8.64 | 8.59 | 8.53 | 8.53 | 8.48 |
| 135.0 | 9.86 | 9.36 | 9.03 | 8.81 | 8.70 | 8.64 | 8.59 | 8.53 | 8.53 |
| 180.0 | 9.80 | 9.30 | 8.97 | 8.81 | 8.64 | 8.64 | 8.53 | 8.53 | 8.53 |
| 225.0 | 11.18 | 9.41 | 8.97 | 8.75 | 8.64 | 8.53 | 8.48 | 8.48 | 8.48 |
| 270.0 | 12.99 | 9.52 | 9.08 | 8.86 | 8.70 | 8.64 | 8.59 | 8.53 | 8.53 |
| 315.0 | 10.19 | 9.41 | 9.03 | 8.81 | 8.70 | 8.64 | 8.53 | 8.53 | 8.53 |
| 360.0 | 10.19 | 9.41 | 9.03 | 8.81 | 8.70 | 8.64 | 8.59 | 8.59 | 8.53 |
| C/γ(°) | 90.0 | | | | | | | | |
| 0.0 | 8.48 | | | | | | | | |
| 45.0 | 8.48 | | | | | | | | |
| 90.0 | 8.48 | | | | | | | | |
| 135.0 | 8.53 | | | | | | | | |
| 180.0 | 8.48 | | | | | | | | |
| 225.0 | 8.42 | | | | | | | | |
| 270.0 | 8.48 | | | | | | | | |
| 315.0 | 8.48 | | | | | | | | |
| 360.0 | 8.48 | | | | | | | | |