



Shenzhen Belling Efficiency Testing Laboratory Co.,Ltd.
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Client:

LumCAT:

Luminaire:

Report No:

Ballast type:

Test No:

Voltage(V): 120.14

LampCAT:

Current(A): 0.2310

Lamp flux(lm): -1.0

Power (W): 27.56

Number of Lamps: 1

PF: 0.9944

Length(mm): 0

Width(mm): 0

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 3454.55, Efficiency(%): 0.00% , Luminous Efficacy(lm/W): 125.34

Central intensity(cd): 1100.492, Maximum intensity(cd): 1140.738

Angle of maximum intensity: C=270.0 γ =5.0

Beam Angle(50%Imax): [C0/180]Total=130.1

[C90/270]Total=105.2

Field angle(10%Imax): [C0/180]Total=174.5

[C90/270]Total=157.9

Maximum s/h(1/2): C0_180=1.23 C90_270=1.25

Maximum s/h(1/4): C0_180=1.39 C90_270=1.35

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 0.00%

Up flux rate of LUM(%): 0.34%

Down flux rate of LUM(%): 99.66%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 72.684%

Zonal flux distribution table

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| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 0.0 | 1100.492 | 0.000 | 0 | 0.00% | 0.00% |
| 5.0 | 1100.311 | 26.310 | 26.31 | 0.00% | 0.76% |
| 10.0 | 1085.853 | 78.206 | 104.516 | 0.00% | 3.03% |
| 15.0 | 1059.543 | 127.263 | 231.779 | 0.00% | 6.71% |
| 20.0 | 1022.912 | 171.624 | 403.403 | 0.00% | 11.68% |
| 25.0 | 978.226 | 209.882 | 613.285 | 0.00% | 17.75% |
| 30.0 | 925.279 | 240.890 | 854.175 | 0.00% | 24.73% |
| 35.0 | 867.213 | 263.957 | 1118.132 | 0.00% | 32.37% |
| 40.0 | 802.716 | 278.615 | 1396.747 | 0.00% | 40.43% |
| 45.0 | 741.441 | 285.913 | 1682.661 | 0.00% | 48.71% |
| 50.0 | 670.951 | 285.394 | 1968.055 | 0.00% | 56.97% |
| 55.0 | 606.194 | 277.694 | 2245.749 | 0.00% | 65.01% |
| 60.0 | 540.988 | 265.168 | 2510.917 | 0.00% | 72.68% |
| 65.0 | 471.057 | 246.030 | 2756.946 | 0.00% | 79.81% |
| 70.0 | 398.969 | 220.296 | 2977.242 | 0.00% | 86.18% |
| 75.0 | 315.603 | 186.778 | 3164.02 | 0.00% | 91.59% |
| 80.0 | 219.049 | 143.058 | 3307.078 | 0.00% | 95.73% |
| 85.0 | 123.423 | 93.058 | 3400.136 | 0.00% | 98.42% |
| 90.0 | 32.767 | 42.766 | 3442.902 | 0.00% | 99.66% |
| 95.0 | 0.655 | 9.151 | 3452.054 | 0.00% | 99.93% |
| 100.0 | 0.218 | 0.237 | 3452.291 | 0.00% | 99.93% |
| 105.0 | 0.136 | 0.095 | 3452.386 | 0.00% | 99.94% |
| 110.0 | 0.205 | 0.089 | 3452.475 | 0.00% | 99.94% |
| 115.0 | 0.164 | 0.093 | 3452.568 | 0.00% | 99.94% |
| 120.0 | 0.328 | 0.119 | 3452.688 | 0.00% | 99.95% |
| 125.0 | 0.409 | 0.170 | 3452.858 | 0.00% | 99.95% |
| 130.0 | 0.450 | 0.187 | 3453.045 | 0.00% | 99.96% |
| 135.0 | 0.587 | 0.210 | 3453.255 | 0.00% | 99.96% |
| 140.0 | 0.573 | 0.215 | 3453.47 | 0.00% | 99.97% |
| 145.0 | 0.683 | 0.210 | 3453.679 | 0.00% | 99.97% |
| 150.0 | 0.765 | 0.213 | 3453.892 | 0.00% | 99.98% |
| 155.0 | 0.792 | 0.197 | 3454.089 | 0.00% | 99.99% |
| 160.0 | 0.806 | 0.168 | 3454.257 | 0.00% | 99.99% |
| 165.0 | 0.778 | 0.131 | 3454.387 | 0.00% | 100.00% |
| 170.0 | 0.737 | 0.090 | 3454.477 | 0.00% | 100.00% |
| 175.0 | 0.737 | 0.053 | 3454.53 | 0.00% | 100.00% |
| 180.0 | 0.861 | 0.019 | 3454.549 | 0.00% | 100.00% |

Equipment: GMS-3000
Temperature($^{\circ}\text{C}$): 25

Date:
Humidity(%): 59%

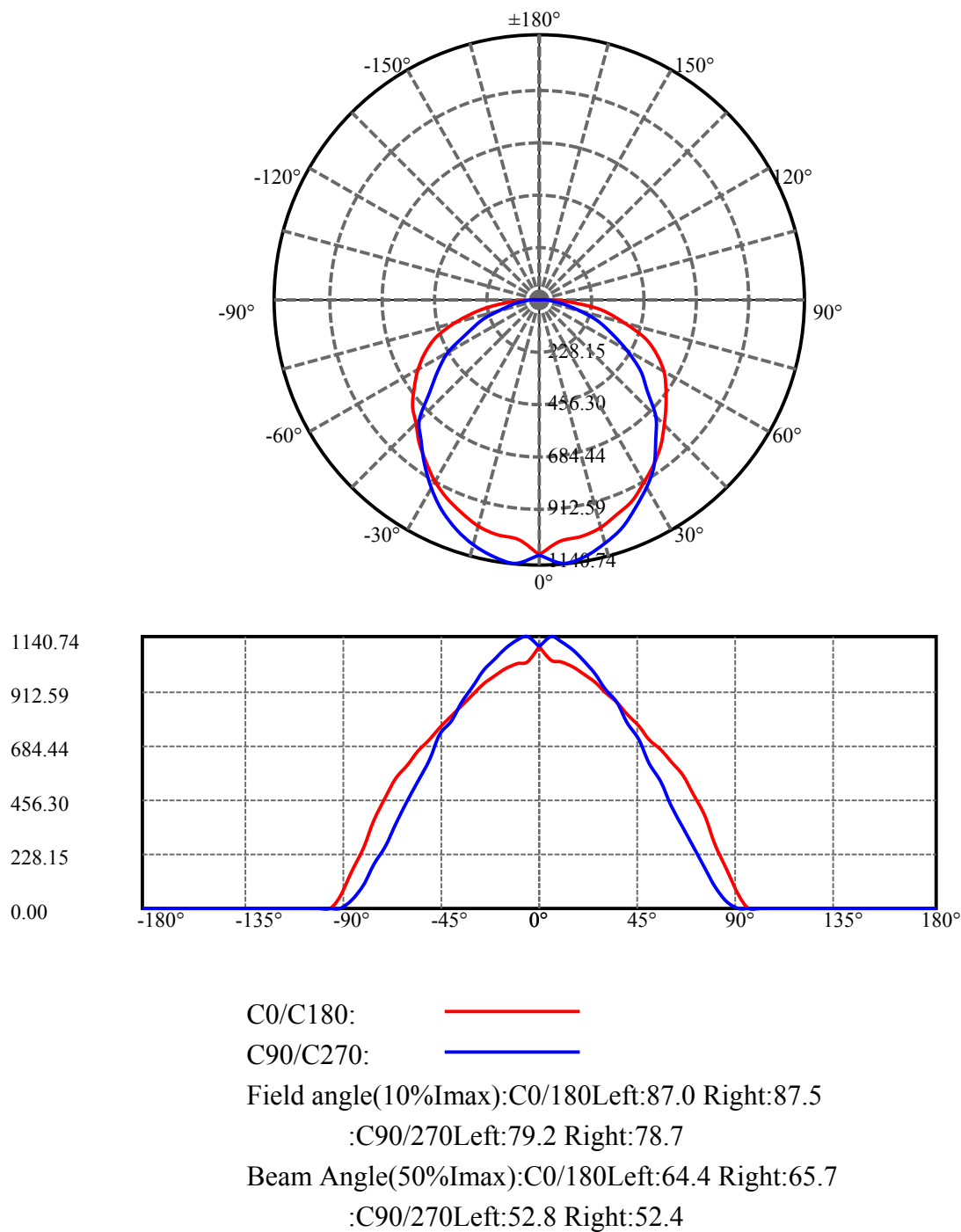
Operator: jarvis

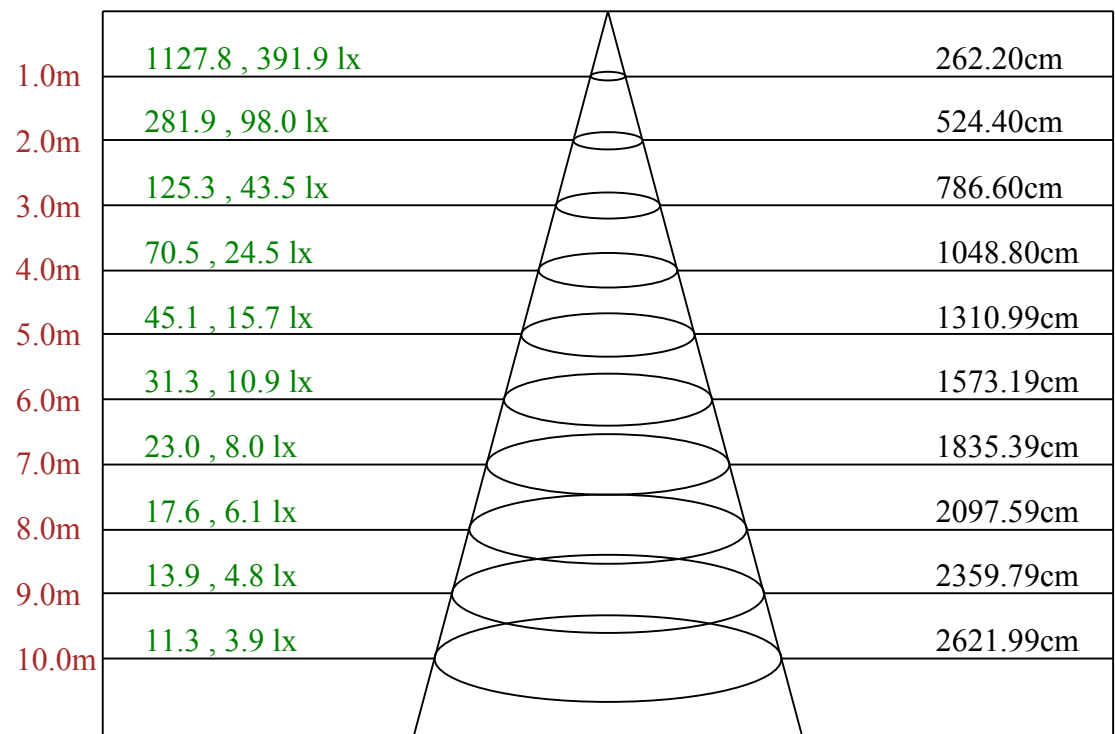
ZONAL LUMEN SUMMARY

| Zone | Lumens | %Lamp | %Fixt |
|---------|---------|-------|---------|
| 0-30 | 854.18 | N.A. | 24.73% |
| 0-40 | 1396.75 | N.A. | 40.43% |
| 0-60 | 2510.92 | N.A. | 72.68% |
| 0-90 | 3442.90 | N.A. | 99.66% |
| 0-120 | 3452.69 | N.A. | 99.95% |
| 0-180 | 3454.55 | N.A. | 100.00% |
| 60-90 | 931.99 | N.A. | 26.98% |
| 90-120 | 9.79 | N.A. | 0.28% |
| 90-130 | 10.14 | N.A. | 0.29% |
| 90-150 | 10.99 | N.A. | 0.32% |
| 90-180 | 11.63 | N.A. | 0.34% |
| 0-65.15 | 2763.64 | N.A. | 80.00% |

ZONAL LUMEN SUMMARY

| | |
|---------|--------|
| 0-10 | 104.52 |
| 10-20 | 298.89 |
| 20-30 | 450.77 |
| 30-40 | 542.57 |
| 40-50 | 571.31 |
| 50-60 | 542.86 |
| 60-70 | 466.33 |
| 70-80 | 329.84 |
| 80-90 | 135.82 |
| 90-100 | 9.39 |
| 100-110 | 0.18 |
| 110-120 | 0.21 |
| 120-130 | 0.36 |
| 130-140 | 0.42 |
| 140-150 | 0.42 |
| 150-160 | 0.36 |
| 160-170 | 0.22 |
| 170-180 | 0.05 |





Max , Ave Beam angle of C270 plane 105.33

Intensity data(cd)

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| C/ γ (°) | 0.0 | 5.0 | 10.0 | 15.0 | 20.0 | 25.0 | 30.0 | 35.0 | 40.0 |
|-----------------|---------|---------|---------|---------|---------|---------|--------|--------|--------|
| 0.0 | 1100.49 | 1039.60 | 1031.30 | 1012.51 | 983.02 | 950.03 | 907.87 | 862.65 | 815.25 |
| 22.5 | 1100.49 | 1080.01 | 1068.87 | 1043.53 | 1013.16 | 974.06 | 927.75 | 877.07 | 825.52 |
| 45.0 | 1100.49 | 1112.12 | 1095.52 | 1067.56 | 1029.33 | 981.71 | 927.75 | 865.93 | 800.40 |
| 67.5 | 1100.49 | 1107.32 | 1086.78 | 1055.32 | 1012.07 | 958.99 | 896.73 | 830.10 | 752.77 |
| 90.0 | 1100.49 | 1139.65 | 1118.89 | 1086.13 | 1042.87 | 988.04 | 924.04 | 865.93 | 775.93 |
| 112.5 | 1100.49 | 1131.78 | 1112.34 | 1079.79 | 1035.66 | 981.05 | 920.11 | 860.03 | 780.74 |
| 135.0 | 1100.49 | 1121.08 | 1102.29 | 1073.46 | 1034.35 | 987.61 | 932.12 | 870.52 | 807.82 |
| 157.5 | 1100.49 | 1074.77 | 1058.60 | 1033.70 | 1004.43 | 965.54 | 915.52 | 868.33 | 814.16 |
| 180.0 | 1100.49 | 1036.54 | 1028.46 | 1006.39 | 976.25 | 941.73 | 900.88 | 851.51 | 804.76 |
| 202.5 | 1100.49 | 1068.65 | 1065.81 | 1044.84 | 1009.89 | 974.94 | 932.12 | 878.38 | 823.33 |
| 225.0 | 1100.49 | 1113.87 | 1097.92 | 1072.58 | 1036.10 | 991.76 | 937.36 | 877.07 | 813.72 |
| 247.5 | 1100.49 | 1110.16 | 1093.99 | 1065.59 | 1026.05 | 977.78 | 919.23 | 854.79 | 779.86 |
| 270.0 | 1100.49 | 1140.74 | 1123.26 | 1092.46 | 1049.64 | 997.65 | 935.18 | 863.96 | 786.41 |
| 292.5 | 1100.49 | 1134.40 | 1117.58 | 1088.09 | 1047.02 | 995.47 | 936.71 | 868.55 | 794.28 |
| 315.0 | 1100.49 | 1124.14 | 1110.16 | 1085.25 | 1051.17 | 1006.61 | 953.96 | 895.20 | 833.16 |
| 337.5 | 1100.49 | 1070.18 | 1061.88 | 1045.49 | 1015.57 | 978.65 | 937.14 | 885.37 | 835.35 |
| 360.0 | 1100.49 | 1039.60 | 1031.30 | 1012.51 | 983.02 | 950.03 | 907.87 | 862.65 | 815.25 |

| C/ γ (°) | 45.0 | 50.0 | 55.0 | 60.0 | 65.0 | 70.0 | 75.0 | 80.0 | 85.0 |
|-----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.0 | 764.79 | 710.61 | 667.58 | 618.65 | 560.10 | 484.30 | 387.09 | 269.35 | 163.62 |
| 22.5 | 767.19 | 710.18 | 664.08 | 612.31 | 550.27 | 474.47 | 377.92 | 260.83 | 156.19 |
| 45.0 | 735.30 | 675.88 | 613.40 | 545.03 | 484.30 | 416.36 | 334.01 | 232.21 | 128.01 |
| 67.5 | 688.55 | 599.42 | 520.13 | 448.26 | 367.21 | 304.74 | 243.35 | 168.42 | 82.14 |
| 90.0 | 705.15 | 609.25 | 529.74 | 434.93 | 343.18 | 261.48 | 173.01 | 93.06 | 31.46 |
| 112.5 | 695.32 | 617.77 | 546.12 | 460.05 | 392.33 | 320.90 | 257.77 | 178.47 | 93.50 |
| 135.0 | 750.81 | 673.48 | 611.44 | 552.89 | 489.32 | 420.08 | 335.32 | 233.74 | 128.23 |
| 157.5 | 761.07 | 706.46 | 657.97 | 598.99 | 537.60 | 463.98 | 365.25 | 253.40 | 143.96 |
| 180.0 | 754.96 | 707.12 | 660.37 | 604.45 | 543.28 | 468.14 | 365.90 | 257.33 | 153.35 |
| 202.5 | 769.59 | 716.73 | 662.77 | 608.16 | 543.94 | 472.29 | 380.54 | 273.28 | 161.87 |
| 225.0 | 746.44 | 678.94 | 622.14 | 557.48 | 497.19 | 427.50 | 347.99 | 251.87 | 148.55 |
| 247.5 | 716.95 | 637.87 | 550.05 | 482.12 | 398.01 | 335.54 | 268.26 | 194.64 | 114.25 |
| 270.0 | 730.49 | 620.61 | 531.49 | 456.56 | 354.11 | 264.32 | 184.37 | 101.58 | 38.23 |
| 292.5 | 728.74 | 648.79 | 559.45 | 487.14 | 403.47 | 339.69 | 275.90 | 199.66 | 110.32 |
| 315.0 | 766.75 | 697.94 | 632.19 | 569.71 | 511.83 | 442.80 | 361.10 | 261.92 | 153.57 |
| 337.5 | 780.95 | 724.16 | 670.20 | 619.08 | 560.76 | 486.92 | 391.90 | 275.03 | 167.55 |
| 360.0 | 764.79 | 710.61 | 667.58 | 618.65 | 560.10 | 484.30 | 387.09 | 269.35 | 163.62 |

| C/ γ (°) | 90.0 | 95.0 | 100.0 | 105.0 | 110.0 | 115.0 | 120.0 | 125.0 | 130.0 |
|-----------------|-------|------|-------|-------|-------|-------|-------|-------|-------|
| 0.0 | 58.54 | 0.22 | 0.22 | 0.44 | 0.66 | 0.22 | 0.66 | 0.66 | 0.44 |
| 22.5 | 48.71 | 0.22 | 0.22 | 0.00 | 0.44 | 0.44 | 0.44 | 0.66 | 0.66 |
| 45.0 | 28.40 | 0.66 | 0.22 | 0.22 | 0.22 | 0.22 | 0.44 | 0.66 | 0.66 |
| 67.5 | 5.24 | 1.09 | 0.22 | 0.22 | 0.22 | 0.00 | 0.22 | 0.66 | 0.66 |
| 90.0 | 1.31 | 0.87 | 0.22 | 0.00 | 0.00 | 0.00 | 0.00 | 0.22 | 0.22 |
| 112.5 | 8.96 | 0.66 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.22 |
| 135.0 | 24.47 | 0.66 | 0.22 | 0.00 | 0.22 | 0.00 | 0.00 | 0.00 | 0.44 |
| 157.5 | 39.98 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.44 | 0.44 | 0.22 |
| 180.0 | 46.53 | 0.22 | 0.00 | 0.00 | 0.00 | 0.00 | 0.22 | 0.22 | 0.22 |
| 202.5 | 49.37 | 0.22 | 0.00 | 0.00 | 0.00 | 0.00 | 0.22 | 0.22 | 0.44 |
| 225.0 | 49.37 | 0.66 | 0.22 | 0.00 | 0.00 | 0.00 | 0.44 | 0.22 | 0.22 |
| 247.5 | 28.84 | 0.87 | 0.22 | 0.00 | 0.00 | 0.00 | 0.00 | 0.44 | 0.22 |
| 270.0 | 2.40 | 1.75 | 0.87 | 0.66 | 0.66 | 0.66 | 0.87 | 0.87 | 0.87 |
| 292.5 | 23.16 | 1.09 | 0.22 | 0.22 | 0.22 | 0.44 | 0.44 | 0.44 | 0.66 |
| 315.0 | 46.53 | 0.87 | 0.22 | 0.22 | 0.22 | 0.44 | 0.44 | 0.44 | 0.66 |
| 337.5 | 62.48 | 0.44 | 0.44 | 0.22 | 0.44 | 0.22 | 0.44 | 0.44 | 0.44 |
| 360.0 | 58.54 | 0.22 | 0.22 | 0.44 | 0.66 | 0.22 | 0.66 | 0.66 | 0.44 |

| Intensity data(cd) | | | | | | | | | Appendix Page: 7 Total:7 |
|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|--------------------------|
| C/ γ (°) | 135.0 | 140.0 | 145.0 | 150.0 | 155.0 | 160.0 | 165.0 | 170.0 | 175.0 |
| 0.0 | 0.87 | 0.66 | 0.66 | 0.66 | 0.66 | 0.87 | 0.66 | 0.66 | 0.66 |
| 22.5 | 0.66 | 0.66 | 0.87 | 0.66 | 0.66 | 0.87 | 0.66 | 0.66 | 0.66 |
| 45.0 | 0.66 | 0.66 | 0.66 | 0.87 | 0.87 | 0.87 | 0.87 | 0.66 | 0.87 |
| 67.5 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.66 |
| 90.0 | 0.66 | 0.44 | 0.44 | 0.87 | 1.09 | 0.87 | 0.87 | 0.87 | 0.66 |
| 112.5 | 0.44 | 0.44 | 0.66 | 0.87 | 0.66 | 0.66 | 0.66 | 0.44 | 0.87 |
| 135.0 | 0.22 | 0.44 | 0.44 | 0.66 | 0.87 | 0.66 | 0.66 | 0.87 | 0.66 |
| 157.5 | 0.00 | 0.44 | 0.44 | 0.66 | 0.66 | 0.44 | 0.66 | 0.66 | 0.44 |
| 180.0 | 0.66 | 0.44 | 0.66 | 0.66 | 0.66 | 0.44 | 0.66 | 0.44 | 0.66 |
| 202.5 | 0.44 | 0.22 | 0.66 | 0.44 | 0.66 | 0.44 | 0.44 | 0.66 | 0.66 |
| 225.0 | 0.44 | 0.44 | 0.66 | 0.44 | 0.66 | 0.87 | 0.66 | 0.44 | 0.87 |
| 247.5 | 0.22 | 0.44 | 0.66 | 0.66 | 0.66 | 0.66 | 0.87 | 0.66 | 0.87 |
| 270.0 | 0.87 | 0.87 | 1.31 | 1.09 | 1.53 | 1.75 | 1.31 | 1.09 | 1.09 |
| 292.5 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 1.09 | 0.66 |
| 315.0 | 0.66 | 0.87 | 0.66 | 0.87 | 0.87 | 0.87 | 0.87 | 1.09 | 0.87 |
| 337.5 | 0.87 | 0.44 | 0.44 | 1.09 | 0.44 | 0.87 | 0.87 | 0.66 | 0.66 |
| 360.0 | 0.87 | 0.66 | 0.66 | 0.66 | 0.66 | 0.87 | 0.66 | 0.66 | 0.66 |
| C/ γ (°) | 180.0 | | | | | | | | |
| 0.0 | 0.86 | | | | | | | | |
| 22.5 | 0.86 | | | | | | | | |
| 45.0 | 0.86 | | | | | | | | |
| 67.5 | 0.86 | | | | | | | | |
| 90.0 | 0.86 | | | | | | | | |
| 112.5 | 0.86 | | | | | | | | |
| 135.0 | 0.86 | | | | | | | | |
| 157.5 | 0.86 | | | | | | | | |
| 180.0 | 0.86 | | | | | | | | |
| 202.5 | 0.86 | | | | | | | | |
| 225.0 | 0.86 | | | | | | | | |
| 247.5 | 0.86 | | | | | | | | |
| 270.0 | 0.86 | | | | | | | | |
| 292.5 | 0.86 | | | | | | | | |
| 315.0 | 0.86 | | | | | | | | |
| 337.5 | 0.86 | | | | | | | | |
| 360.0 | 0.86 | | | | | | | | |