



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

LumCAT:

Luminaire:

Report No:

Ballast type:

Test No:

Voltage(V): 120.06

LampCAT:

Current(A): 0.1680

Lamp flux(lm): -1.0

Power (W): 19.97

Number of Lamps: 1

PF: 0.9911

Length(mm): 0

Width(mm): 0

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 1230.26, Efficiency(%): 0.00% , Luminous Efficacy(lm/W): 61.61

Central intensity(cd): 441.821, Maximum intensity(cd): 457.855

Angle of maximum intensity: C=90.0 γ =5.0

Beam Angle(50%Imax): [C0/180]Total=108.3

[C90/270]Total=112.8

Field angle(10%Imax): [C0/180]Total=155.2

[C90/270]Total=161.0

Maximum s/h(1/2): C0_180=1.27 C90_270=1.31

Maximum s/h(1/4): C0_180=1.40 C90_270=1.41

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 0.00%

Up flux rate of LUM(%): 0.48%

Down flux rate of LUM(%): 99.52%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 79.686%

Equipment: GMS-3000
Temperature(°C): 25

Date:
Humidity(%): 58%

Operator: Tester

Zonal flux distribution table

Appendix Page: 2 Total:9

| $\gamma(^{\circ})$ | Average I(cd) | Zonal F(lm) | Sum F(lm) | Eff Flux(%) | Eff Sum(%) |
|--------------------|---------------|-------------|-----------|-------------|------------|
| 0.0 | 441.821 | 0.000 | 0 | 0.00% | 0.00% |
| 5.0 | 440.352 | 10.546 | 10.546 | 0.00% | 0.86% |
| 10.0 | 434.241 | 31.287 | 41.833 | 0.00% | 3.40% |
| 15.0 | 423.822 | 50.900 | 92.733 | 0.00% | 7.54% |
| 20.0 | 409.521 | 68.679 | 161.412 | 0.00% | 13.12% |
| 25.0 | 391.618 | 84.025 | 245.437 | 0.00% | 19.95% |
| 30.0 | 370.366 | 96.430 | 341.866 | 0.00% | 27.79% |
| 35.0 | 345.819 | 105.463 | 447.33 | 0.00% | 36.36% |
| 40.0 | 318.751 | 110.878 | 558.208 | 0.00% | 45.37% |
| 45.0 | 289.108 | 112.550 | 670.758 | 0.00% | 54.52% |
| 50.0 | 257.010 | 110.351 | 781.109 | 0.00% | 63.49% |
| 55.0 | 223.178 | 104.409 | 885.518 | 0.00% | 71.98% |
| 60.0 | 187.064 | 94.826 | 980.344 | 0.00% | 79.69% |
| 65.0 | 149.883 | 81.913 | 1062.257 | 0.00% | 86.34% |
| 70.0 | 111.769 | 66.252 | 1128.509 | 0.00% | 91.73% |
| 75.0 | 73.828 | 48.512 | 1177.021 | 0.00% | 95.67% |
| 80.0 | 38.208 | 29.978 | 1206.998 | 0.00% | 98.11% |
| 85.0 | 11.953 | 13.630 | 1220.628 | 0.00% | 99.22% |
| 90.0 | 1.508 | 3.686 | 1224.314 | 0.00% | 99.52% |
| 95.0 | 0.760 | 0.621 | 1224.935 | 0.00% | 99.57% |
| 100.0 | 0.680 | 0.391 | 1225.326 | 0.00% | 99.60% |
| 105.0 | 0.694 | 0.368 | 1225.694 | 0.00% | 99.63% |
| 110.0 | 0.787 | 0.387 | 1226.081 | 0.00% | 99.66% |
| 115.0 | 0.760 | 0.392 | 1226.473 | 0.00% | 99.69% |
| 120.0 | 0.787 | 0.376 | 1226.849 | 0.00% | 99.72% |
| 125.0 | 0.961 | 0.404 | 1227.253 | 0.00% | 99.76% |
| 130.0 | 0.987 | 0.423 | 1227.676 | 0.00% | 99.79% |
| 135.0 | 1.054 | 0.412 | 1228.089 | 0.00% | 99.82% |
| 140.0 | 1.067 | 0.393 | 1228.482 | 0.00% | 99.86% |
| 145.0 | 1.147 | 0.369 | 1228.851 | 0.00% | 99.89% |
| 150.0 | 1.214 | 0.348 | 1229.199 | 0.00% | 99.91% |
| 155.0 | 1.281 | 0.316 | 1229.515 | 0.00% | 99.94% |
| 160.0 | 1.254 | 0.266 | 1229.78 | 0.00% | 99.96% |
| 165.0 | 1.254 | 0.207 | 1229.987 | 0.00% | 99.98% |
| 170.0 | 1.254 | 0.149 | 1230.136 | 0.00% | 99.99% |
| 175.0 | 1.308 | 0.092 | 1230.228 | 0.00% | 100.00% |
| 180.0 | 1.356 | 0.032 | 1230.259 | 0.00% | 100.00% |

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

Date:
Humidity(%): 58%

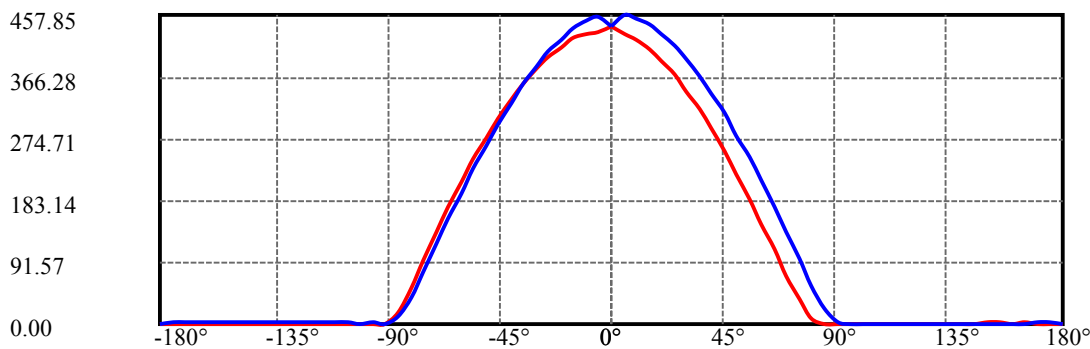
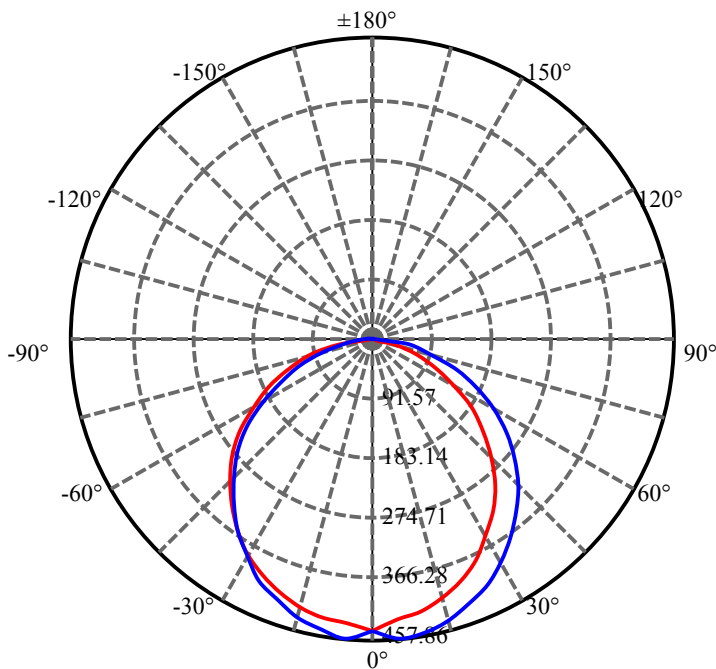
Operator: Tester

ZONAL LUMEN SUMMARY

| Zone | Lumens | %Lamp | %Fixt |
|---------|---------|-------|---------|
| 0-30 | 341.87 | N.A. | 27.79% |
| 0-40 | 558.21 | N.A. | 45.37% |
| 0-60 | 980.34 | N.A. | 79.69% |
| 0-90 | 1224.31 | N.A. | 99.52% |
| 0-120 | 1226.85 | N.A. | 99.72% |
| 0-180 | 1230.26 | N.A. | 100.00% |
| 60-90 | 243.97 | N.A. | 19.83% |
| 90-120 | 2.54 | N.A. | 0.21% |
| 90-130 | 3.36 | N.A. | 0.27% |
| 90-150 | 4.88 | N.A. | 0.40% |
| 90-180 | 5.91 | N.A. | 0.48% |
| 0-60.24 | 984.21 | N.A. | 80.00% |

ZONAL LUMEN SUMMARY

| | |
|---------|--------|
| 0-10 | 41.83 |
| 10-20 | 119.58 |
| 20-30 | 180.45 |
| 30-40 | 216.34 |
| 40-50 | 222.90 |
| 50-60 | 199.23 |
| 60-70 | 148.16 |
| 70-80 | 78.49 |
| 80-90 | 17.32 |
| 90-100 | 1.01 |
| 100-110 | 0.75 |
| 110-120 | 0.77 |
| 120-130 | 0.83 |
| 130-140 | 0.81 |
| 140-150 | 0.72 |
| 150-160 | 0.58 |
| 160-170 | 0.36 |
| 170-180 | 0.09 |

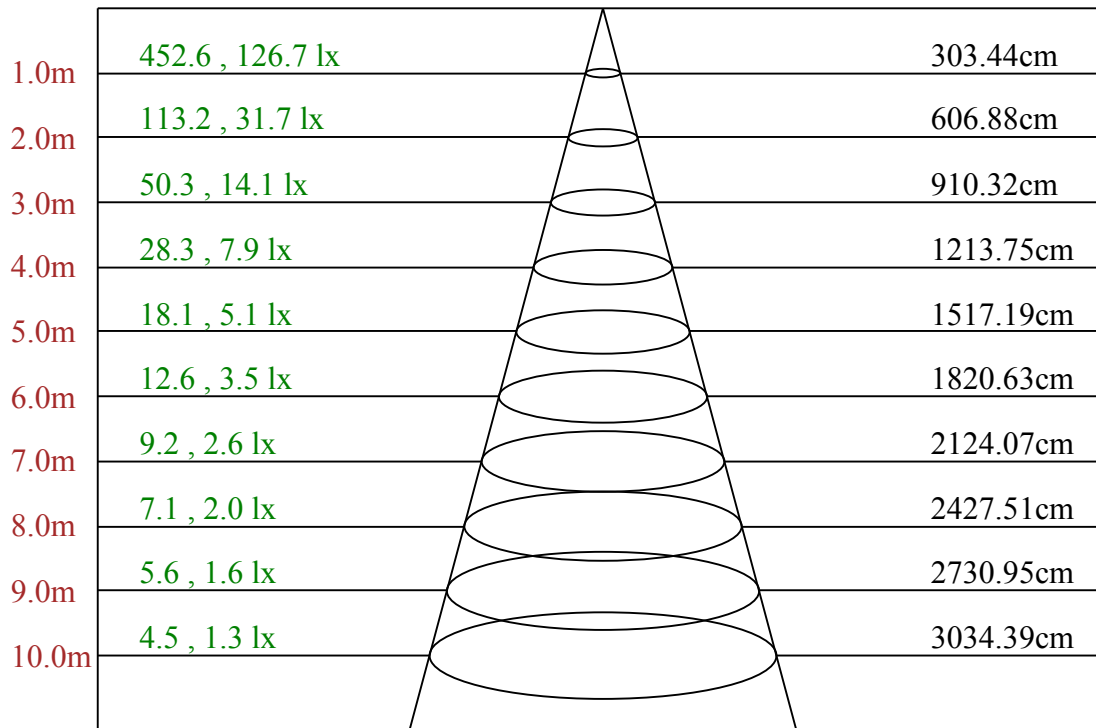


C0/C180: —

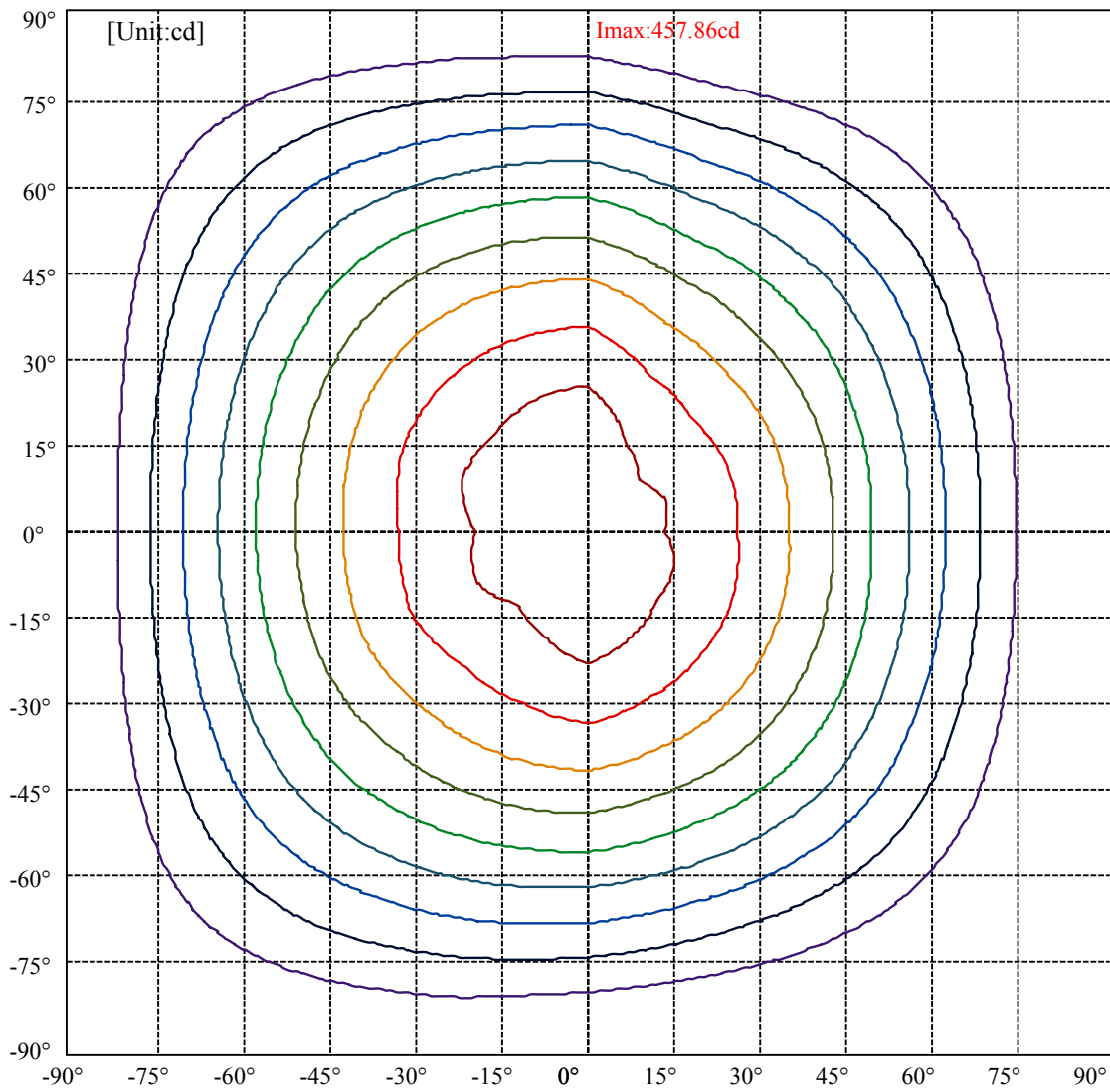
C90/C270: —

Field angle(10%Imax):C0/180Left:81.3 Right:73.9
 :C90/270Left:79.2 Right:81.8

Beam Angle(50%Imax):C0/180Left:58.4 Right:49.9
 :C90/270Left:55.2 Right:57.6



Max , Ave Beam angle of C90 plane 113.22

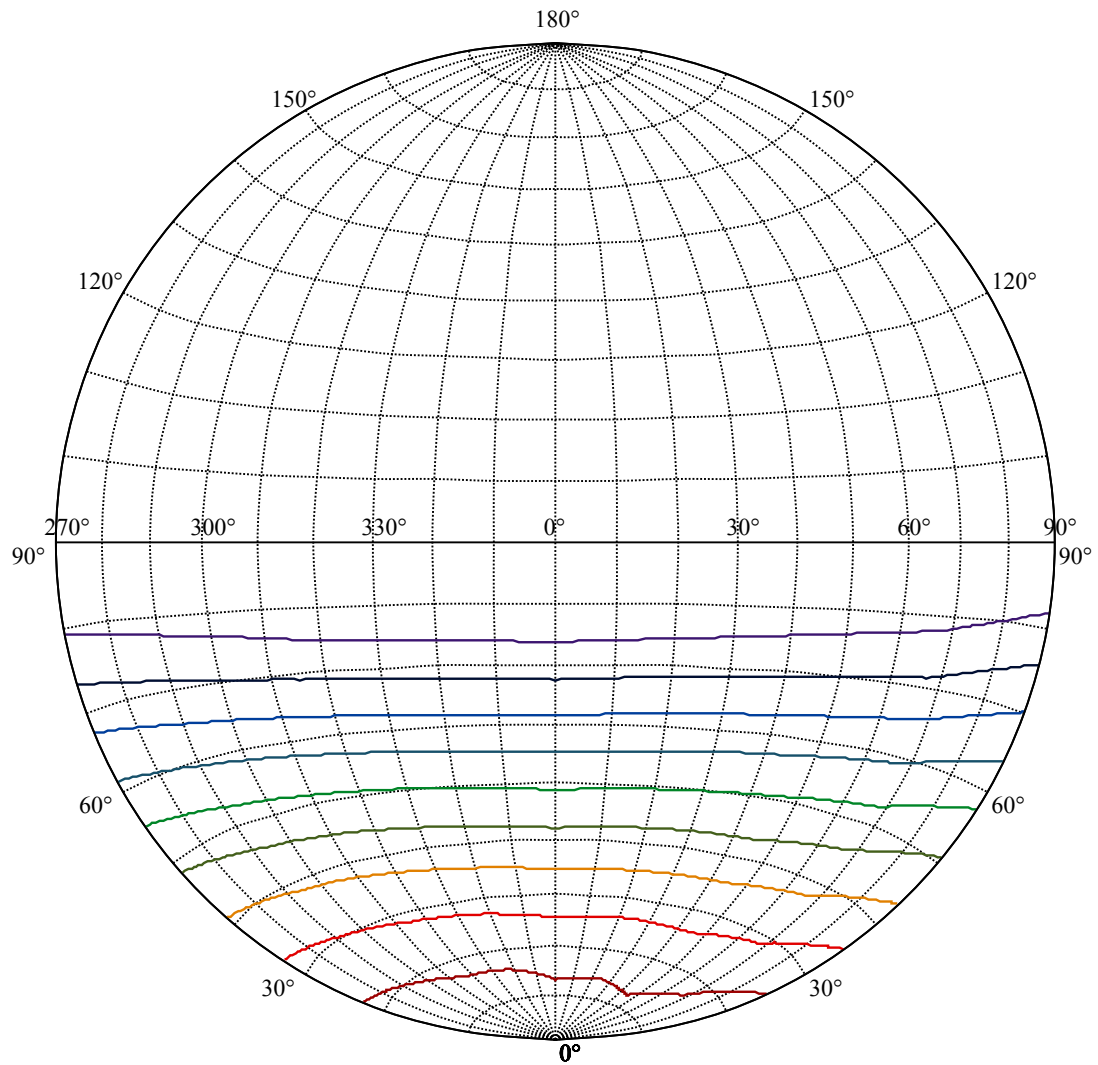


| | |
|-------------------|---|
| (10%Imax) 45.7855 | — |
| (20%Imax) 91.571 | — |
| (30%Imax) 137.357 | — |
| (40%Imax) 183.142 | — |
| (50%Imax) 228.928 | — |
| (60%Imax) 274.713 | — |
| (70%Imax) 320.499 | — |
| (80%Imax) 366.284 | — |
| (90%Imax) 412.07 | — |

Equipment: GMS-3000
Temperature(°C): 25

Date:
Humidity(%): 58%

Operator: Tester












House

[Unit:cd]

Road

I_{max}:457.86

| | |
|--------------------------------|---|
| (10%I _{max}) 45.7855 |  |
| (20%I _{max}) 91.571 |  |
| (30%I _{max}) 137.357 |  |
| (40%I _{max}) 183.142 |  |
| (50%I _{max}) 228.928 |  |
| (60%I _{max}) 274.713 |  |
| (70%I _{max}) 320.499 |  |
| (80%I _{max}) 366.284 |  |
| (90%I _{max}) 412.07 |  |

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 | 441.82 | 428.40 | 420.50 | 407.69 | 389.98 | 369.70 | 344.73 | 318.47 | 288.80 |
| 22.5 | 441.82 | 433.31 | 423.92 | 410.26 | 392.97 | 372.90 | 348.78 | 321.67 | 292.22 |
| 45.0 | 441.82 | 426.26 | 417.94 | 406.20 | 390.83 | 371.19 | 349.21 | 323.81 | 295.42 |
| 67.5 | 441.82 | 435.44 | 427.97 | 417.09 | 402.57 | 383.57 | 360.95 | 335.97 | 309.08 |
| 90.0 | 441.82 | 457.86 | 452.52 | 443.34 | 429.68 | 412.39 | 392.11 | 367.56 | 340.67 |
| 112.5 | 441.82 | 451.88 | 447.82 | 439.07 | 426.48 | 410.26 | 389.76 | 366.71 | 340.46 |
| 135.0 | 441.82 | 444.62 | 440.99 | 432.88 | 421.14 | 405.99 | 388.27 | 366.28 | 342.38 |
| 157.5 | 441.82 | 446.33 | 442.91 | 435.66 | 423.49 | 407.48 | 388.70 | 365.00 | 339.60 |
| 180.0 | 441.82 | 432.03 | 430.75 | 422.42 | 410.68 | 395.74 | 377.60 | 355.83 | 331.71 |
| 202.5 | 441.82 | 439.07 | 435.44 | 427.55 | 415.81 | 399.80 | 381.01 | 358.17 | 332.35 |
| 225.0 | 441.82 | 430.11 | 426.26 | 417.94 | 405.56 | 389.98 | 370.98 | 348.99 | 323.81 |
| 247.5 | 441.82 | 438.00 | 432.67 | 423.49 | 410.90 | 393.82 | 373.33 | 349.64 | 324.66 |
| 270.0 | 441.82 | 455.29 | 448.25 | 436.72 | 422.00 | 403.85 | 381.65 | 356.04 | 327.22 |
| 292.5 | 441.82 | 447.82 | 439.28 | 426.90 | 410.68 | 390.83 | 367.78 | 341.95 | 312.71 |
| 315.0 | 441.82 | 439.71 | 430.75 | 417.94 | 401.29 | 381.87 | 358.39 | 332.35 | 304.38 |
| 337.5 | 441.82 | 439.50 | 429.89 | 416.02 | 398.30 | 376.53 | 352.62 | 324.66 | 294.56 |
| 360.0 | 441.82 | 428.40 | 420.50 | 407.69 | 389.98 | 369.70 | 344.73 | 318.47 | 288.80 |
| C/ γ (°) | 45.0 | 50.0 | 55.0 | 60.0 | 65.0 | 70.0 | 75.0 | 80.0 | 85.0 |
| 0.0 | 256.14 | 220.50 | 185.28 | 148.99 | 110.14 | 72.15 | 36.07 | 9.61 | 1.07 |
| 22.5 | 261.48 | 226.05 | 190.83 | 153.90 | 117.19 | 78.76 | 42.69 | 12.59 | 1.28 |
| 45.0 | 264.68 | 233.09 | 199.79 | 163.29 | 126.36 | 88.16 | 52.08 | 19.64 | 2.35 |
| 67.5 | 279.41 | 247.18 | 212.81 | 177.17 | 141.09 | 102.46 | 64.46 | 32.02 | 7.04 |
| 90.0 | 311.43 | 279.84 | 247.60 | 212.17 | 174.82 | 137.68 | 97.55 | 57.85 | 24.12 |
| 112.5 | 313.35 | 282.82 | 248.25 | 212.60 | 174.82 | 137.04 | 98.40 | 60.41 | 26.47 |
| 135.0 | 313.99 | 283.04 | 251.23 | 214.09 | 176.10 | 137.25 | 98.62 | 59.34 | 21.99 |
| 157.5 | 310.79 | 279.84 | 246.96 | 210.68 | 173.32 | 135.97 | 96.91 | 55.92 | 18.36 |
| 180.0 | 305.45 | 276.85 | 244.40 | 209.82 | 174.18 | 135.76 | 95.20 | 53.36 | 16.86 |
| 202.5 | 303.53 | 272.79 | 239.92 | 205.77 | 169.48 | 131.70 | 93.07 | 52.30 | 16.22 |
| 225.0 | 295.85 | 265.75 | 235.01 | 201.93 | 165.43 | 127.64 | 90.93 | 52.72 | 17.29 |
| 247.5 | 296.70 | 265.75 | 232.66 | 198.51 | 162.22 | 125.72 | 88.16 | 51.66 | 19.64 |
| 270.0 | 296.91 | 265.11 | 230.74 | 192.53 | 155.82 | 118.04 | 78.12 | 39.92 | 11.10 |
| 292.5 | 281.76 | 248.46 | 213.67 | 176.10 | 137.68 | 98.83 | 61.26 | 26.68 | 4.27 |
| 315.0 | 271.94 | 237.57 | 200.65 | 163.72 | 124.23 | 84.74 | 47.60 | 16.22 | 1.71 |
| 337.5 | 262.33 | 227.54 | 191.04 | 151.76 | 115.26 | 76.42 | 40.13 | 11.10 | 1.49 |
| 360.0 | 256.14 | 220.50 | 185.28 | 148.99 | 110.14 | 72.15 | 36.07 | 9.61 | 1.07 |
| C/ γ (°) | 90.0 | 95.0 | 100.0 | 105.0 | 110.0 | 115.0 | 120.0 | 125.0 | 130.0 |
| 0.0 | 0.85 | 0.64 | 0.85 | 0.85 | 1.07 | 0.85 | 0.85 | 1.07 | 1.07 |
| 22.5 | 1.28 | 0.85 | 1.07 | 0.64 | 1.07 | 0.85 | 0.85 | 1.28 | 1.28 |
| 45.0 | 1.28 | 1.07 | 0.64 | 0.85 | 0.85 | 1.07 | 1.07 | 1.28 | 1.07 |
| 67.5 | 1.49 | 1.07 | 0.64 | 0.85 | 1.07 | 0.85 | 1.07 | 1.07 | 1.07 |
| 90.0 | 2.99 | 0.64 | 0.64 | 0.64 | 0.85 | 0.85 | 0.64 | 1.07 | 1.07 |
| 112.5 | 2.56 | 0.64 | 0.43 | 0.21 | 0.43 | 0.43 | 0.64 | 0.64 | 1.28 |
| 135.0 | 1.71 | 0.43 | 0.21 | 0.21 | 0.43 | 0.43 | 0.64 | 0.85 | 0.64 |
| 157.5 | 1.07 | 0.43 | 0.64 | 0.43 | 0.43 | 0.43 | 0.43 | 0.64 | 0.43 |
| 180.0 | 0.64 | 0.43 | 0.43 | 0.43 | 0.43 | 0.21 | 0.64 | 0.64 | 0.64 |
| 202.5 | 1.28 | 0.43 | 0.43 | 0.64 | 0.43 | 0.64 | 0.64 | 0.85 | 0.64 |
| 225.0 | 1.49 | 0.43 | 0.43 | 0.43 | 0.64 | 0.43 | 0.43 | 0.64 | 0.64 |
| 247.5 | 1.92 | 0.64 | 0.64 | 0.43 | 0.43 | 0.64 | 0.64 | 0.64 | 0.64 |
| 270.0 | 1.28 | 1.49 | 1.28 | 1.49 | 1.49 | 1.49 | 1.49 | 1.71 | 1.92 |
| 292.5 | 1.71 | 1.07 | 0.85 | 1.07 | 1.07 | 1.07 | 1.07 | 1.28 | 1.28 |
| 315.0 | 1.49 | 1.07 | 0.85 | 0.85 | 0.85 | 1.07 | 0.64 | 0.85 | 1.07 |
| 337.5 | 1.07 | 0.85 | 0.85 | 1.07 | 1.07 | 0.85 | 0.85 | 0.85 | 1.07 |
| 360.0 | 0.85 | 0.64 | 0.85 | 0.85 | 1.07 | 0.85 | 0.85 | 1.07 | 1.07 |

Intensity data(cd)

| C/γ(°) | 135.0 | 140.0 | 145.0 | 150.0 | 155.0 | 160.0 | 165.0 | 170.0 | 175.0 |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0.0 | 1.28 | 1.07 | 1.28 | 1.49 | 1.49 | 1.28 | 1.49 | 1.07 | 1.28 |
| 22.5 | 1.28 | 1.28 | 1.28 | 1.07 | 1.49 | 1.28 | 1.28 | 1.28 | 1.28 |
| 45.0 | 0.85 | 1.28 | 1.28 | 1.28 | 1.28 | 1.28 | 1.28 | 1.28 | 1.07 |
| 67.5 | 1.07 | 1.07 | 1.28 | 1.28 | 1.28 | 1.07 | 1.28 | 1.07 | 1.07 |
| 90.0 | 1.28 | 1.07 | 1.07 | 1.28 | 1.28 | 1.28 | 1.28 | 1.49 | 1.49 |
| 112.5 | 0.85 | 0.64 | 1.07 | 0.85 | 1.28 | 1.28 | 1.28 | 0.85 | 1.28 |
| 135.0 | 0.85 | 0.85 | 0.85 | 1.07 | 1.07 | 1.07 | 0.85 | 1.07 | 1.28 |
| 157.5 | 0.64 | 0.85 | 1.07 | 0.85 | 1.07 | 1.07 | 1.07 | 1.28 | 1.28 |
| 180.0 | 0.85 | 1.07 | 0.85 | 1.07 | 1.07 | 1.28 | 1.07 | 1.07 | 1.07 |
| 202.5 | 0.85 | 0.85 | 1.07 | 1.07 | 1.07 | 1.28 | 1.28 | 1.28 | 1.07 |
| 225.0 | 0.85 | 0.64 | 0.85 | 1.07 | 1.07 | 1.07 | 1.07 | 1.49 | 1.28 |
| 247.5 | 0.85 | 0.85 | 0.85 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 | 1.07 |
| 270.0 | 1.71 | 1.92 | 1.92 | 1.92 | 1.92 | 2.14 | 1.92 | 1.92 | 2.14 |
| 292.5 | 1.28 | 1.28 | 1.28 | 1.49 | 1.28 | 1.28 | 1.28 | 1.28 | 1.71 |
| 315.0 | 1.28 | 1.07 | 1.07 | 1.07 | 1.49 | 1.28 | 1.28 | 1.28 | 1.28 |
| 337.5 | 1.07 | 1.28 | 1.28 | 1.49 | 1.28 | 1.07 | 1.28 | 1.28 | 1.28 |
| 360.0 | 1.28 | 1.07 | 1.28 | 1.49 | 1.49 | 1.28 | 1.49 | 1.07 | 1.28 |

| C/γ(°) | 180.0 |
|--------|-------|
| 0.0 | 1.36 |
| 22.5 | 1.36 |
| 45.0 | 1.36 |
| 67.5 | 1.36 |
| 90.0 | 1.36 |
| 112.5 | 1.36 |
| 135.0 | 1.36 |
| 157.5 | 1.36 |
| 180.0 | 1.36 |
| 202.5 | 1.36 |
| 225.0 | 1.36 |
| 247.5 | 1.36 |
| 270.0 | 1.36 |
| 292.5 | 1.36 |
| 315.0 | 1.36 |
| 337.5 | 1.36 |
| 360.0 | 1.36 |