

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: METALUX

Report Number: P178735

Luminaire Tested: **24ALNG-LD4-45-UNV-EL14W-L835-CD1-U**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P178735
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P34286)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 24ALNG-LD4-45-UNV-EL14W-L835-CD1-U
Description: METALUX ARCLINE 2X4 TROFFER

Light Source: EATON LED 3500K
Ballast/Driver: OSRAM ELECTRONIC DRIVER

Summary

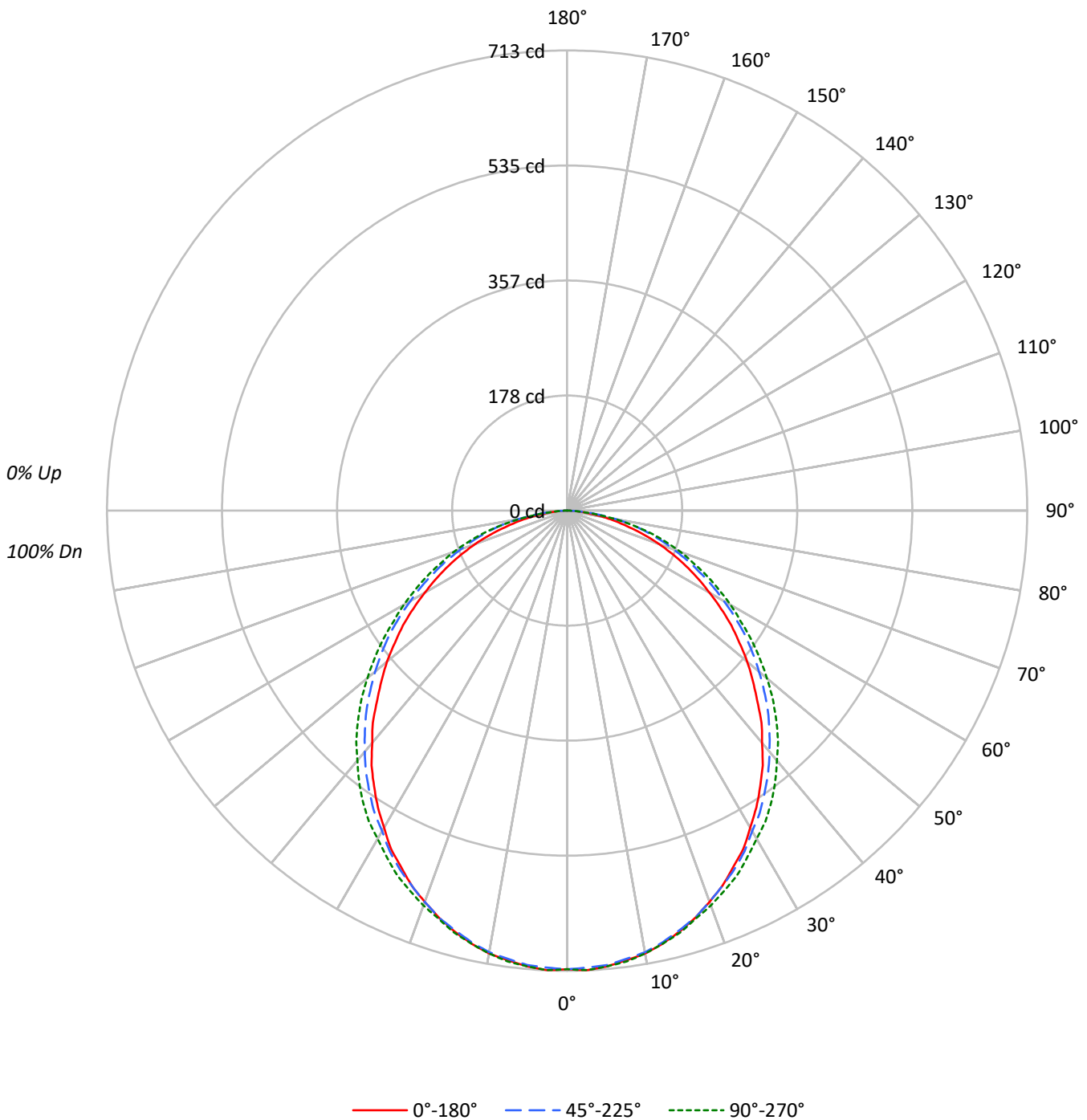
Lumens per Lamp: N/A
Luminaire Lumens: 1892.0 lumens
Efficiency: N/A
Efficacy: 147.8 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33
Luminous Opening: Rectangular (W 4' x L: 2' x H: 0')
CIE Type: Direct

Input Watts (W): 12.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT

TEST NUMBER: P178735

CATALOG NUMBER: 24ALNG-LD4-45-UNV-EL14W-L835-CD1-U

Luminous Intensity Polar Plot





TEST NUMBER: P178735

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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| RF | 20 | | | | 20 | | | | 20 | | | | 20 | | | | 20 | |
| RC | 80 | | | | 70 | | | | 50 | | | | 30 | | | | 10 | 0 |
| RW | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 0 |
| RCR | | | | | | | | | | | | | | | | | | |
| 0 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |
| 1 | 109 | 104 | 100 | 96 | 106 | 102 | 98 | 95 | 98 | 95 | 92 | 94 | 91 | 89 | 90 | 88 | 86 | 84 |
| 2 | 99 | 91 | 84 | 79 | 97 | 89 | 83 | 78 | 86 | 80 | 76 | 82 | 78 | 74 | 79 | 76 | 72 | 70 |
| 3 | 90 | 80 | 72 | 65 | 88 | 78 | 71 | 65 | 75 | 69 | 64 | 73 | 67 | 63 | 70 | 66 | 62 | 59 |
| 4 | 83 | 71 | 62 | 56 | 81 | 70 | 62 | 55 | 67 | 60 | 54 | 65 | 59 | 54 | 63 | 57 | 53 | 51 |
| 5 | 76 | 64 | 55 | 48 | 74 | 62 | 54 | 48 | 60 | 53 | 47 | 58 | 52 | 47 | 56 | 51 | 46 | 44 |
| 6 | 71 | 57 | 48 | 42 | 69 | 56 | 48 | 42 | 55 | 47 | 41 | 53 | 46 | 41 | 51 | 45 | 41 | 39 |
| 7 | 65 | 52 | 43 | 37 | 64 | 51 | 43 | 37 | 50 | 42 | 37 | 48 | 41 | 36 | 47 | 41 | 36 | 34 |
| 8 | 61 | 47 | 39 | 33 | 59 | 47 | 39 | 33 | 45 | 38 | 33 | 44 | 38 | 33 | 43 | 37 | 32 | 31 |
| 9 | 57 | 44 | 35 | 30 | 56 | 43 | 35 | 30 | 42 | 35 | 30 | 41 | 34 | 30 | 40 | 34 | 29 | 28 |
| 10 | 53 | 40 | 32 | 27 | 52 | 40 | 32 | 27 | 39 | 32 | 27 | 38 | 31 | 27 | 37 | 31 | 27 | 25 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|-----|-----|-----|
| 0° | 956 | 956 | 956 |
| 5° | 957 | 955 | 957 |
| 10° | 952 | 949 | 952 |
| 15° | 940 | 937 | 943 |
| 20° | 924 | 924 | 932 |
| 25° | 904 | 910 | 925 |
| 30° | 882 | 891 | 912 |
| 35° | 857 | 876 | 906 |
| 40° | 825 | 857 | 888 |
| 45° | 792 | 837 | 871 |
| 50° | 763 | 813 | 846 |
| 55° | 729 | 789 | 817 |
| 60° | 686 | 755 | 788 |
| 65° | 647 | 723 | 761 |
| 70° | 595 | 689 | 736 |
| 75° | 517 | 662 | 693 |
| 80° | 432 | 601 | 571 |
| 85° | 338 | 400 | 307 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 67.2 | 3.6 |
| 10°-20° | 190.2 | 10.1 |
| 20°-30° | 283.1 | 15.0 |
| 30°-40° | 334.5 | 17.7 |
| 40°-50° | 338.6 | 17.9 |
| 50°-60° | 297.1 | 15.7 |
| 60°-70° | 221.9 | 11.7 |
| 70°-80° | 128.9 | 6.8 |
| 80°-90° | 30.5 | 1.6 |
| 90°-100° | 0.0 | 0.0 |
| 100°-110° | 0.0 | 0.0 |
| 110°-120° | 0.0 | 0.0 |
| 120°-130° | 0.0 | 0.0 |
| 130°-140° | 0.0 | 0.0 |
| 140°-150° | 0.0 | 0.0 |
| 150°-160° | 0.0 | 0.0 |
| 160°-170° | 0.0 | 0.0 |
| 170°-180° | 0.0 | 0.0 |
| 0°-30° | 540.5 | 28.6 |
| 0°-40° | 875.0 | 46.2 |
| 0°-60° | 1510.7 | 79.8 |
| 0°-90° | 1892.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1892.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 711 | 711 | 711 | 711 | 711 | |
| 5° | 709 | 709 | 707 | 709 | 709 | 67 |
| 15° | 675 | 675 | 673 | 675 | 677 | 190 |
| 25° | 609 | 611 | 613 | 619 | 623 | 281 |
| 35° | 522 | 524 | 534 | 548 | 552 | 326 |
| 45° | 416 | 424 | 440 | 454 | 458 | 322 |
| 55° | 311 | 318 | 336 | 346 | 348 | 277 |
| 65° | 203 | 211 | 227 | 235 | 239 | 201 |
| 75° | 100 | 114 | 127 | 133 | 133 | 107 |
| 85° | 22 | 28 | 26 | 22 | 20 | 25 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P178735

CATALOG NUMBER: 24ALNG-LD4-45-UNV-EL14W-L835-CD1-U

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 10° | 15° | 20° | 22.5° | 25° | 30° | 35° | 40° | 45° |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 710.8 | 710.8 | 710.8 | 710.8 | 710.8 | 710.8 | 710.8 | 710.8 | 710.8 | 710.8 | 710.8 |
| 2.5° | 712.7 | 712.7 | 712.7 | 710.8 | 710.8 | 710.8 | 710.8 | 710.8 | 710.8 | 708.8 | 708.8 |
| 5° | 708.8 | 708.8 | 708.8 | 708.8 | 708.8 | 708.8 | 708.8 | 706.8 | 706.8 | 706.8 | 706.8 |
| 7.5° | 702.8 | 702.8 | 704.8 | 704.8 | 702.8 | 702.8 | 702.8 | 702.8 | 702.8 | 700.8 | 700.8 |
| 10° | 696.8 | 696.8 | 696.8 | 696.8 | 696.8 | 696.8 | 696.8 | 694.8 | 694.8 | 694.8 | 694.8 |
| 12.5° | 686.9 | 686.9 | 686.9 | 686.9 | 686.9 | 686.9 | 686.9 | 684.9 | 684.9 | 684.9 | 684.9 |
| 15° | 674.9 | 674.9 | 674.9 | 674.9 | 674.9 | 674.9 | 674.9 | 672.9 | 672.9 | 672.9 | 672.9 |
| 17.5° | 661.0 | 661.0 | 661.0 | 661.0 | 661.0 | 661.0 | 661.0 | 659.0 | 661.0 | 659.0 | 661.0 |
| 20° | 645.1 | 645.1 | 645.1 | 645.1 | 645.1 | 645.1 | 645.1 | 645.1 | 645.1 | 645.1 | 645.1 |
| 22.5° | 629.1 | 629.1 | 629.1 | 629.1 | 629.1 | 629.1 | 629.1 | 629.1 | 629.1 | 629.1 | 629.1 |
| 25° | 609.2 | 611.2 | 611.2 | 611.2 | 609.2 | 611.2 | 611.2 | 611.2 | 611.2 | 611.2 | 613.2 |
| 27.5° | 591.3 | 589.3 | 589.3 | 589.3 | 589.3 | 591.3 | 591.3 | 591.3 | 593.3 | 593.3 | 595.3 |
| 30° | 567.4 | 567.4 | 567.4 | 567.4 | 567.4 | 569.4 | 569.4 | 571.4 | 571.4 | 573.4 | 573.4 |
| 32.5° | 545.5 | 545.5 | 545.5 | 547.5 | 547.5 | 547.5 | 547.5 | 549.5 | 551.5 | 553.5 | 555.5 |
| 35° | 521.6 | 521.6 | 521.6 | 521.6 | 523.6 | 523.6 | 525.6 | 527.6 | 529.6 | 531.6 | 533.6 |
| 37.5° | 497.7 | 495.7 | 497.7 | 497.7 | 497.7 | 499.7 | 501.7 | 503.7 | 505.7 | 507.7 | 511.7 |
| 40° | 469.9 | 469.9 | 471.8 | 471.8 | 473.8 | 473.8 | 475.8 | 477.8 | 481.8 | 483.8 | 487.8 |
| 42.5° | 446.0 | 444.0 | 446.0 | 448.0 | 449.9 | 449.9 | 451.9 | 453.9 | 455.9 | 459.9 | 463.9 |
| 45° | 416.1 | 418.1 | 420.1 | 422.1 | 422.1 | 424.1 | 426.1 | 428.0 | 432.0 | 436.0 | 440.0 |
| 47.5° | 390.2 | 392.2 | 394.2 | 394.2 | 398.2 | 398.2 | 400.2 | 404.2 | 406.1 | 410.1 | 414.1 |
| 50° | 364.3 | 364.3 | 364.3 | 366.3 | 368.3 | 372.3 | 372.3 | 376.3 | 380.3 | 384.2 | 388.2 |
| 52.5° | 336.5 | 338.5 | 338.5 | 340.4 | 342.4 | 344.4 | 346.4 | 350.4 | 354.4 | 358.4 | 362.3 |
| 55° | 310.6 | 310.6 | 310.6 | 314.6 | 316.6 | 318.5 | 320.5 | 324.5 | 328.5 | 332.5 | 336.5 |
| 57.5° | 282.7 | 282.7 | 284.7 | 286.7 | 288.7 | 290.7 | 292.7 | 296.6 | 300.6 | 304.6 | 308.6 |
| 60° | 254.8 | 256.8 | 256.8 | 258.8 | 262.8 | 264.8 | 266.8 | 270.8 | 274.7 | 278.7 | 280.7 |
| 62.5° | 229.0 | 229.0 | 230.9 | 232.9 | 236.9 | 238.9 | 240.9 | 244.9 | 248.9 | 250.9 | 254.8 |
| 65° | 203.1 | 203.1 | 205.1 | 207.1 | 211.0 | 211.0 | 215.0 | 219.0 | 223.0 | 225.0 | 227.0 |
| 67.5° | 177.2 | 177.2 | 179.2 | 179.2 | 185.2 | 187.1 | 189.1 | 191.1 | 195.1 | 197.1 | 201.1 |
| 70° | 151.3 | 151.3 | 153.3 | 155.3 | 159.3 | 161.3 | 163.3 | 167.2 | 171.2 | 173.2 | 175.2 |
| 72.5° | 125.4 | 125.4 | 127.4 | 129.4 | 135.4 | 137.4 | 139.4 | 141.4 | 145.3 | 147.3 | 151.3 |
| 75° | 99.5 | 101.5 | 103.5 | 107.5 | 111.5 | 113.5 | 113.5 | 117.5 | 121.4 | 125.4 | 127.4 |
| 77.5° | 77.6 | 77.6 | 81.6 | 85.6 | 89.6 | 89.6 | 91.6 | 95.6 | 97.6 | 101.5 | 103.5 |
| 80° | 55.7 | 55.7 | 59.7 | 63.7 | 65.7 | 67.7 | 69.7 | 73.7 | 75.7 | 77.6 | 77.6 |
| 82.5° | 35.8 | 37.8 | 39.8 | 41.8 | 45.8 | 47.8 | 49.8 | 51.8 | 51.8 | 51.8 | 49.8 |
| 85° | 21.9 | 21.9 | 23.9 | 25.9 | 27.9 | 27.9 | 27.9 | 27.9 | 27.9 | 25.9 | 25.9 |
| 87.5° | 8.0 | 8.0 | 10.0 | 10.0 | 10.0 | 8.0 | 8.0 | 8.0 | 6.0 | 6.0 | 6.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



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CANDELA DISTRIBUTION (continued):

| | 50° | 55° | 60° | 65° | 67.5° | 70° | 75° | 80° | 85° | 90° |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 710.8 | 710.8 | 710.8 | 710.8 | 710.8 | 710.8 | 710.8 | 710.8 | 710.8 | 710.8 |
| 2.5° | 708.8 | 708.8 | 710.8 | 710.8 | 710.8 | 710.8 | 710.8 | 712.7 | 712.7 | 712.7 |
| 5° | 704.8 | 706.8 | 706.8 | 706.8 | 708.8 | 708.8 | 708.8 | 708.8 | 708.8 | 708.8 |
| 7.5° | 700.8 | 700.8 | 702.8 | 702.8 | 702.8 | 702.8 | 702.8 | 702.8 | 702.8 | 704.8 |
| 10° | 694.8 | 694.8 | 696.8 | 696.8 | 696.8 | 696.8 | 696.8 | 696.8 | 696.8 | 696.8 |
| 12.5° | 684.9 | 684.9 | 684.9 | 686.9 | 686.9 | 686.9 | 686.9 | 686.9 | 686.9 | 686.9 |
| 15° | 672.9 | 672.9 | 674.9 | 674.9 | 674.9 | 676.9 | 676.9 | 676.9 | 674.9 | 676.9 |
| 17.5° | 661.0 | 661.0 | 663.0 | 663.0 | 663.0 | 663.0 | 663.0 | 663.0 | 665.0 | 663.0 |
| 20° | 645.1 | 647.0 | 647.0 | 649.0 | 649.0 | 649.0 | 649.0 | 649.0 | 651.0 | 651.0 |
| 22.5° | 631.1 | 633.1 | 635.1 | 635.1 | 635.1 | 635.1 | 637.1 | 637.1 | 637.1 | 637.1 |
| 25° | 615.2 | 615.2 | 617.2 | 619.2 | 619.2 | 621.2 | 621.2 | 621.2 | 621.2 | 623.2 |
| 27.5° | 597.3 | 599.3 | 601.3 | 603.2 | 603.2 | 603.2 | 605.2 | 605.2 | 605.2 | 605.2 |
| 30° | 577.4 | 579.4 | 581.3 | 583.3 | 585.3 | 585.3 | 587.3 | 587.3 | 587.3 | 587.3 |
| 32.5° | 557.5 | 561.4 | 563.4 | 565.4 | 565.4 | 567.4 | 569.4 | 569.4 | 571.4 | 571.4 |
| 35° | 537.5 | 539.5 | 543.5 | 545.5 | 547.5 | 547.5 | 549.5 | 549.5 | 549.5 | 551.5 |
| 37.5° | 513.7 | 517.6 | 521.6 | 523.6 | 525.6 | 525.6 | 525.6 | 527.6 | 529.6 | 529.6 |
| 40° | 491.8 | 495.7 | 497.7 | 501.7 | 501.7 | 503.7 | 505.7 | 505.7 | 505.7 | 505.7 |
| 42.5° | 467.9 | 471.8 | 475.8 | 477.8 | 479.8 | 479.8 | 481.8 | 481.8 | 483.8 | 483.8 |
| 45° | 444.0 | 448.0 | 451.9 | 453.9 | 453.9 | 455.9 | 455.9 | 457.9 | 457.9 | 457.9 |
| 47.5° | 418.1 | 424.1 | 424.1 | 428.0 | 428.0 | 428.0 | 430.0 | 432.0 | 434.0 | 432.0 |
| 50° | 392.2 | 396.2 | 398.2 | 402.2 | 402.2 | 402.2 | 404.2 | 404.2 | 406.1 | 404.2 |
| 52.5° | 366.3 | 368.3 | 372.3 | 372.3 | 374.3 | 374.3 | 376.3 | 376.3 | 376.3 | 376.3 |
| 55° | 340.4 | 342.4 | 344.4 | 346.4 | 346.4 | 346.4 | 348.4 | 346.4 | 348.4 | 348.4 |
| 57.5° | 312.6 | 314.6 | 316.6 | 318.5 | 318.5 | 318.5 | 318.5 | 320.5 | 320.5 | 318.5 |
| 60° | 284.7 | 286.7 | 288.7 | 288.7 | 290.7 | 290.7 | 290.7 | 290.7 | 292.7 | 292.7 |
| 62.5° | 256.8 | 258.8 | 260.8 | 260.8 | 262.8 | 262.8 | 264.8 | 264.8 | 264.8 | 264.8 |
| 65° | 229.0 | 230.9 | 234.9 | 234.9 | 234.9 | 236.9 | 236.9 | 236.9 | 238.9 | 238.9 |
| 67.5° | 203.1 | 205.1 | 207.1 | 207.1 | 209.0 | 209.0 | 211.0 | 211.0 | 211.0 | 211.0 |
| 70° | 179.2 | 179.2 | 181.2 | 183.2 | 183.2 | 183.2 | 185.2 | 185.2 | 185.2 | 187.1 |
| 72.5° | 153.3 | 155.3 | 157.3 | 159.3 | 159.3 | 159.3 | 159.3 | 159.3 | 159.3 | 159.3 |
| 75° | 129.4 | 131.4 | 131.4 | 133.4 | 133.4 | 133.4 | 133.4 | 133.4 | 133.4 | 133.4 |
| 77.5° | 105.5 | 105.5 | 107.5 | 105.5 | 105.5 | 105.5 | 103.5 | 103.5 | 103.5 | 103.5 |
| 80° | 77.6 | 75.7 | 75.7 | 75.7 | 73.7 | 73.7 | 73.7 | 73.7 | 71.7 | 73.7 |
| 82.5° | 49.8 | 49.8 | 47.8 | 45.8 | 45.8 | 45.8 | 45.8 | 45.8 | 45.8 | 45.8 |
| 85° | 23.9 | 23.9 | 21.9 | 21.9 | 21.9 | 19.9 | 19.9 | 19.9 | 19.9 | 19.9 |
| 87.5° | 6.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)