

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: P178776

Luminaire Tested: **24ALNG-LD4-74-UNV-EL14W-L840-CD1-U**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P178776
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-LD4-74-UNV-EL14W-L840-CD1-U
Description: METALUX ARCLINE 2X4 TROFFER

Light Source: EATON LED 4000K
Ballast/Driver: OSRAM ELECTRONIC DRIVER

Summary

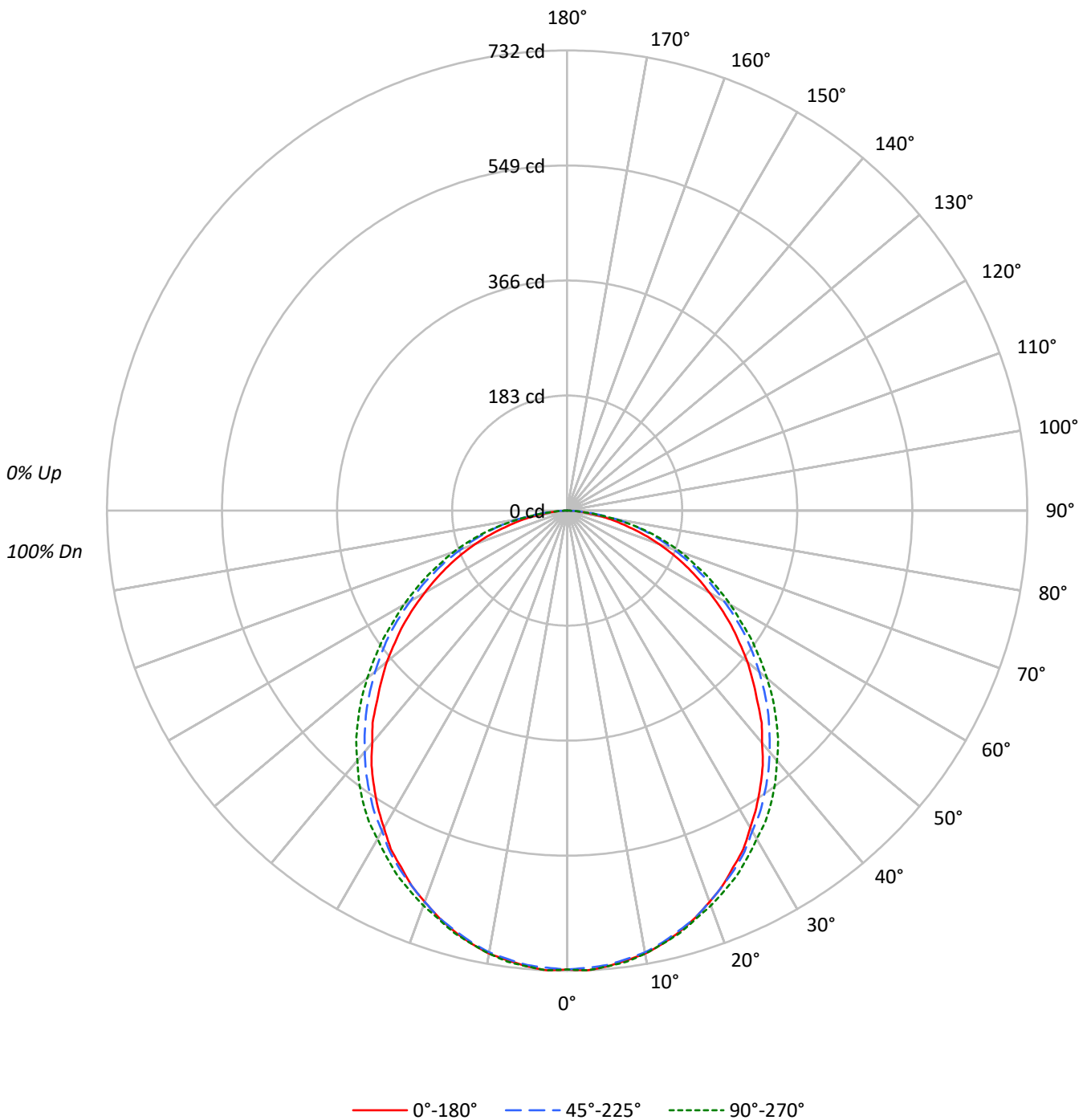
Lumens per Lamp: N/A
Luminaire Lumens: 1943.0 lumens
Efficiency: N/A
Efficacy: 151.8 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33
Luminous Opening: Rectangular (W 4' x L: 2' x H: 0')
CIE Type: Direct

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: P178776

CATALOG NUMBER: 24ALNG-LD4-74-UNV-EL14W-L840-CD1-U

Luminous Intensity Polar Plot





TEST NUMBER: P178776

CATALOG NUMBER: 24ALNG-LD4-74-UNV-EL14W-L840-CD1-U

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° | 982 | 982 | 982 |
| 5° | 983 | 980 | 983 |
| 10° | 978 | 975 | 978 |
| 15° | 965 | 963 | 968 |
| 20° | 948 | 948 | 957 |
| 25° | 929 | 935 | 950 |
| 30° | 905 | 915 | 937 |
| 35° | 880 | 900 | 930 |
| 40° | 847 | 880 | 912 |
| 45° | 813 | 860 | 895 |
| 50° | 783 | 835 | 869 |
| 55° | 748 | 810 | 839 |
| 60° | 704 | 776 | 809 |
| 65° | 664 | 742 | 781 |
| 70° | 611 | 708 | 756 |
| 75° | 531 | 680 | 712 |
| 80° | 443 | 618 | 586 |
| 85° | 347 | 411 | 315 |



TEST NUMBER: P178776

CATALOG NUMBER: 24ALNG-LD4-74-UNV-EL14W-L840-CD1-U

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 69.0 | 3.6 |
| 10°-20° | 195.3 | 10.1 |
| 20°-30° | 290.8 | 15.0 |
| 30°-40° | 343.5 | 17.7 |
| 40°-50° | 347.7 | 17.9 |
| 50°-60° | 305.1 | 15.7 |
| 60°-70° | 227.9 | 11.7 |
| 70°-80° | 132.3 | 6.8 |
| 80°-90° | 31.3 | 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° | 555.1 | 28.6 |
| 0°-40° | 898.6 | 46.2 |
| 0°-60° | 1551.5 | 79.8 |
| 0°-90° | 1943.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1943.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 730 | 730 | 730 | 730 | 730 | |
| 5° | 728 | 728 | 726 | 728 | 728 | 69 |
| 15° | 693 | 693 | 691 | 693 | 695 | 195 |
| 25° | 626 | 628 | 630 | 636 | 640 | 288 |
| 35° | 536 | 538 | 548 | 562 | 566 | 335 |
| 45° | 427 | 436 | 452 | 466 | 470 | 331 |
| 55° | 319 | 327 | 346 | 356 | 358 | 285 |
| 65° | 208 | 217 | 233 | 241 | 245 | 206 |
| 75° | 102 | 116 | 131 | 137 | 137 | 110 |
| 85° | 22 | 29 | 27 | 22 | 20 | 26 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P178776

CATALOG NUMBER: 24ALNG-LD4-74-UNV-EL14W-L840-CD1-U

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 10° | 15° | 20° | 22.5° | 25° | 30° | 35° | 40° | 45° |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 729.9 | 729.9 | 729.9 | 729.9 | 729.9 | 729.9 | 729.9 | 729.9 | 729.9 | 729.9 | 729.9 |
| 2.5° | 732.0 | 732.0 | 732.0 | 729.9 | 729.9 | 729.9 | 729.9 | 729.9 | 729.9 | 727.9 | 727.9 |
| 5° | 727.9 | 727.9 | 727.9 | 727.9 | 727.9 | 727.9 | 727.9 | 725.8 | 725.8 | 725.8 | 725.8 |
| 7.5° | 721.7 | 721.7 | 723.8 | 723.8 | 721.7 | 721.7 | 721.7 | 721.7 | 721.7 | 719.7 | 719.7 |
| 10° | 715.6 | 715.6 | 715.6 | 715.6 | 715.6 | 715.6 | 715.6 | 713.6 | 713.6 | 713.6 | 713.6 |
| 12.5° | 705.4 | 705.4 | 705.4 | 705.4 | 705.4 | 705.4 | 705.4 | 703.3 | 703.3 | 703.3 | 703.3 |
| 15° | 693.1 | 693.1 | 693.1 | 693.1 | 693.1 | 693.1 | 693.1 | 691.1 | 691.1 | 691.1 | 691.1 |
| 17.5° | 678.8 | 678.8 | 678.8 | 678.8 | 678.8 | 678.8 | 678.8 | 676.8 | 678.8 | 676.8 | 678.8 |
| 20° | 662.4 | 662.4 | 662.4 | 662.4 | 662.4 | 662.4 | 662.4 | 662.4 | 662.4 | 662.4 | 662.4 |
| 22.5° | 646.1 | 646.1 | 646.1 | 646.1 | 646.1 | 646.1 | 646.1 | 646.1 | 646.1 | 646.1 | 646.1 |
| 25° | 625.6 | 627.7 | 627.7 | 627.7 | 625.6 | 627.7 | 627.7 | 627.7 | 627.7 | 627.7 | 629.7 |
| 27.5° | 607.2 | 605.2 | 605.2 | 605.2 | 605.2 | 607.2 | 607.2 | 607.2 | 609.3 | 609.3 | 611.3 |
| 30° | 582.7 | 582.7 | 582.7 | 582.7 | 582.7 | 584.8 | 584.8 | 586.8 | 586.8 | 588.8 | 588.8 |
| 32.5° | 560.2 | 560.2 | 560.2 | 562.3 | 562.3 | 562.3 | 562.3 | 564.3 | 566.3 | 568.4 | 570.4 |
| 35° | 535.7 | 535.7 | 535.7 | 535.7 | 537.7 | 537.7 | 539.8 | 541.8 | 543.9 | 545.9 | 547.9 |
| 37.5° | 511.1 | 509.1 | 511.1 | 511.1 | 511.1 | 513.2 | 515.2 | 517.3 | 519.3 | 521.4 | 525.5 |
| 40° | 482.5 | 482.5 | 484.6 | 484.6 | 486.6 | 486.6 | 488.7 | 490.7 | 494.8 | 496.8 | 500.9 |
| 42.5° | 458.0 | 455.9 | 458.0 | 460.0 | 462.1 | 462.1 | 464.1 | 466.2 | 468.2 | 472.3 | 476.4 |
| 45° | 427.3 | 429.4 | 431.4 | 433.5 | 433.5 | 435.5 | 437.5 | 439.6 | 443.7 | 447.8 | 451.9 |
| 47.5° | 400.7 | 402.8 | 404.8 | 404.8 | 408.9 | 408.9 | 411.0 | 415.1 | 417.1 | 421.2 | 425.3 |
| 50° | 374.2 | 374.2 | 374.2 | 376.2 | 378.2 | 382.3 | 382.3 | 386.4 | 390.5 | 394.6 | 398.7 |
| 52.5° | 345.5 | 347.6 | 347.6 | 349.6 | 351.7 | 353.7 | 355.8 | 359.8 | 363.9 | 368.0 | 372.1 |
| 55° | 319.0 | 319.0 | 319.0 | 323.0 | 325.1 | 327.1 | 329.2 | 333.3 | 337.4 | 341.4 | 345.5 |
| 57.5° | 290.3 | 290.3 | 292.4 | 294.4 | 296.5 | 298.5 | 300.6 | 304.6 | 308.7 | 312.8 | 316.9 |
| 60° | 261.7 | 263.8 | 263.8 | 265.8 | 269.9 | 271.9 | 274.0 | 278.1 | 282.2 | 286.2 | 288.3 |
| 62.5° | 235.1 | 235.1 | 237.2 | 239.2 | 243.3 | 245.4 | 247.4 | 251.5 | 255.6 | 257.6 | 261.7 |
| 65° | 208.5 | 208.5 | 210.6 | 212.6 | 216.7 | 216.7 | 220.8 | 224.9 | 229.0 | 231.0 | 233.1 |
| 67.5° | 182.0 | 182.0 | 184.0 | 184.0 | 190.1 | 192.2 | 194.2 | 196.3 | 200.4 | 202.4 | 206.5 |
| 70° | 155.4 | 155.4 | 157.4 | 159.5 | 163.6 | 165.6 | 167.7 | 171.7 | 175.8 | 177.9 | 179.9 |
| 72.5° | 128.8 | 128.8 | 130.9 | 132.9 | 139.0 | 141.1 | 143.1 | 145.2 | 149.3 | 151.3 | 155.4 |
| 75° | 102.2 | 104.3 | 106.3 | 110.4 | 114.5 | 116.5 | 116.5 | 120.6 | 124.7 | 128.8 | 130.9 |
| 77.5° | 79.7 | 79.7 | 83.8 | 87.9 | 92.0 | 92.0 | 94.1 | 98.1 | 100.2 | 104.3 | 106.3 |
| 80° | 57.2 | 57.2 | 61.3 | 65.4 | 67.5 | 69.5 | 71.6 | 75.6 | 77.7 | 79.7 | 79.7 |
| 82.5° | 36.8 | 38.8 | 40.9 | 42.9 | 47.0 | 49.1 | 51.1 | 53.2 | 53.2 | 53.2 | 51.1 |
| 85° | 22.5 | 22.5 | 24.5 | 26.6 | 28.6 | 28.6 | 28.6 | 28.6 | 28.6 | 26.6 | 26.6 |
| 87.5° | 8.2 | 8.2 | 10.2 | 10.2 | 10.2 | 8.2 | 8.2 | 8.2 | 6.1 | 6.1 | 6.1 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



TEST NUMBER: P178776

CATALOG NUMBER: 24ALNG-LD4-74-UNV-EL14W-L840-CD1-U

CANDELA DISTRIBUTION (continued):

| | 50° | 55° | 60° | 65° | 67.5° | 70° | 75° | 80° | 85° | 90° |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 729.9 | 729.9 | 729.9 | 729.9 | 729.9 | 729.9 | 729.9 | 729.9 | 729.9 | 729.9 |
| 2.5° | 727.9 | 727.9 | 729.9 | 729.9 | 729.9 | 729.9 | 729.9 | 732.0 | 732.0 | 732.0 |
| 5° | 723.8 | 725.8 | 725.8 | 725.8 | 727.9 | 727.9 | 727.9 | 727.9 | 727.9 | 727.9 |
| 7.5° | 719.7 | 719.7 | 721.7 | 721.7 | 721.7 | 721.7 | 721.7 | 721.7 | 721.7 | 723.8 |
| 10° | 713.6 | 713.6 | 715.6 | 715.6 | 715.6 | 715.6 | 715.6 | 715.6 | 715.6 | 715.6 |
| 12.5° | 703.3 | 703.3 | 703.3 | 705.4 | 705.4 | 705.4 | 705.4 | 705.4 | 705.4 | 705.4 |
| 15° | 691.1 | 691.1 | 693.1 | 693.1 | 693.1 | 695.2 | 695.2 | 695.2 | 693.1 | 695.2 |
| 17.5° | 678.8 | 678.8 | 680.8 | 680.8 | 680.8 | 680.8 | 680.8 | 680.8 | 682.9 | 680.8 |
| 20° | 662.4 | 664.5 | 664.5 | 666.5 | 666.5 | 666.5 | 666.5 | 666.5 | 668.6 | 668.6 |
| 22.5° | 648.1 | 650.2 | 652.2 | 652.2 | 652.2 | 652.2 | 654.3 | 654.3 | 654.3 | 654.3 |
| 25° | 631.8 | 631.8 | 633.8 | 635.9 | 635.9 | 637.9 | 637.9 | 637.9 | 637.9 | 640.0 |
| 27.5° | 613.4 | 615.4 | 617.5 | 619.5 | 619.5 | 619.5 | 621.6 | 621.6 | 621.6 | 621.6 |
| 30° | 592.9 | 595.0 | 597.0 | 599.1 | 601.1 | 601.1 | 603.2 | 603.2 | 603.2 | 603.2 |
| 32.5° | 572.5 | 576.6 | 578.6 | 580.7 | 580.7 | 582.7 | 584.8 | 584.8 | 586.8 | 586.8 |
| 35° | 552.0 | 554.1 | 558.2 | 560.2 | 562.3 | 562.3 | 564.3 | 564.3 | 564.3 | 566.3 |
| 37.5° | 527.5 | 531.6 | 535.7 | 537.7 | 539.8 | 539.8 | 539.8 | 541.8 | 543.9 | 543.9 |
| 40° | 505.0 | 509.1 | 511.1 | 515.2 | 515.2 | 517.3 | 519.3 | 519.3 | 519.3 | 519.3 |
| 42.5° | 480.5 | 484.6 | 488.7 | 490.7 | 492.7 | 492.7 | 494.8 | 494.8 | 496.8 | 496.8 |
| 45° | 455.9 | 460.0 | 464.1 | 466.2 | 466.2 | 468.2 | 468.2 | 470.3 | 470.3 | 470.3 |
| 47.5° | 429.4 | 435.5 | 435.5 | 439.6 | 439.6 | 439.6 | 441.6 | 443.7 | 445.7 | 443.7 |
| 50° | 402.8 | 406.9 | 408.9 | 413.0 | 413.0 | 413.0 | 415.1 | 415.1 | 417.1 | 415.1 |
| 52.5° | 376.2 | 378.2 | 382.3 | 382.3 | 384.4 | 384.4 | 386.4 | 386.4 | 386.4 | 386.4 |
| 55° | 349.6 | 351.7 | 353.7 | 355.8 | 355.8 | 355.8 | 357.8 | 355.8 | 357.8 | 357.8 |
| 57.5° | 321.0 | 323.0 | 325.1 | 327.1 | 327.1 | 327.1 | 327.1 | 329.2 | 329.2 | 327.1 |
| 60° | 292.4 | 294.4 | 296.5 | 296.5 | 298.5 | 298.5 | 298.5 | 298.5 | 300.6 | 300.6 |
| 62.5° | 263.8 | 265.8 | 267.8 | 267.8 | 269.9 | 269.9 | 271.9 | 271.9 | 271.9 | 271.9 |
| 65° | 235.1 | 237.2 | 241.3 | 241.3 | 241.3 | 243.3 | 243.3 | 243.3 | 245.4 | 245.4 |
| 67.5° | 208.5 | 210.6 | 212.6 | 212.6 | 214.7 | 214.7 | 216.7 | 216.7 | 216.7 | 216.7 |
| 70° | 184.0 | 184.0 | 186.1 | 188.1 | 188.1 | 188.1 | 190.1 | 190.1 | 190.1 | 192.2 |
| 72.5° | 157.4 | 159.5 | 161.5 | 163.6 | 163.6 | 163.6 | 163.6 | 163.6 | 163.6 | 163.6 |
| 75° | 132.9 | 134.9 | 134.9 | 137.0 | 137.0 | 137.0 | 137.0 | 137.0 | 137.0 | 137.0 |
| 77.5° | 108.4 | 108.4 | 110.4 | 108.4 | 108.4 | 108.4 | 106.3 | 106.3 | 106.3 | 106.3 |
| 80° | 79.7 | 77.7 | 77.7 | 77.7 | 75.6 | 75.6 | 75.6 | 75.6 | 73.6 | 75.6 |
| 82.5° | 51.1 | 51.1 | 49.1 | 47.0 | 47.0 | 47.0 | 47.0 | 47.0 | 47.0 | 47.0 |
| 85° | 24.5 | 24.5 | 22.5 | 22.5 | 22.5 | 20.4 | 20.4 | 20.4 | 20.4 | 20.4 |
| 87.5° | 6.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)