

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: RSA

Report Number: P219901

Luminaire Tested: **MRZ-1-REC-X-3-L35-80-WFL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P219901  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P14882)  
Test Lab: INNOVATION CENTER (G1)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: RSA  
Catalog Number: MRZ-1-REC-X-3-L35-80-WFL-UNV-X-STD-LSL  
Description: MRZ INTEGRAL LED DOWNLIGHT  
55 DEGREE WIDE FLOOD OPTIC WITH LINEAR SPREAD LENS, LIGHT LEVEL 3  
Light Source: (1) 3500K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 914.8 lumens  
Efficiency: N/A  
Efficacy: 76.9 lumens/watt  
Spacing Criteria (0/90/45): 0.88 / 0.83 / 0.87  
Luminous Opening: Circular (Dia: 0.17' x H: 0')  
CIE Type: Direct

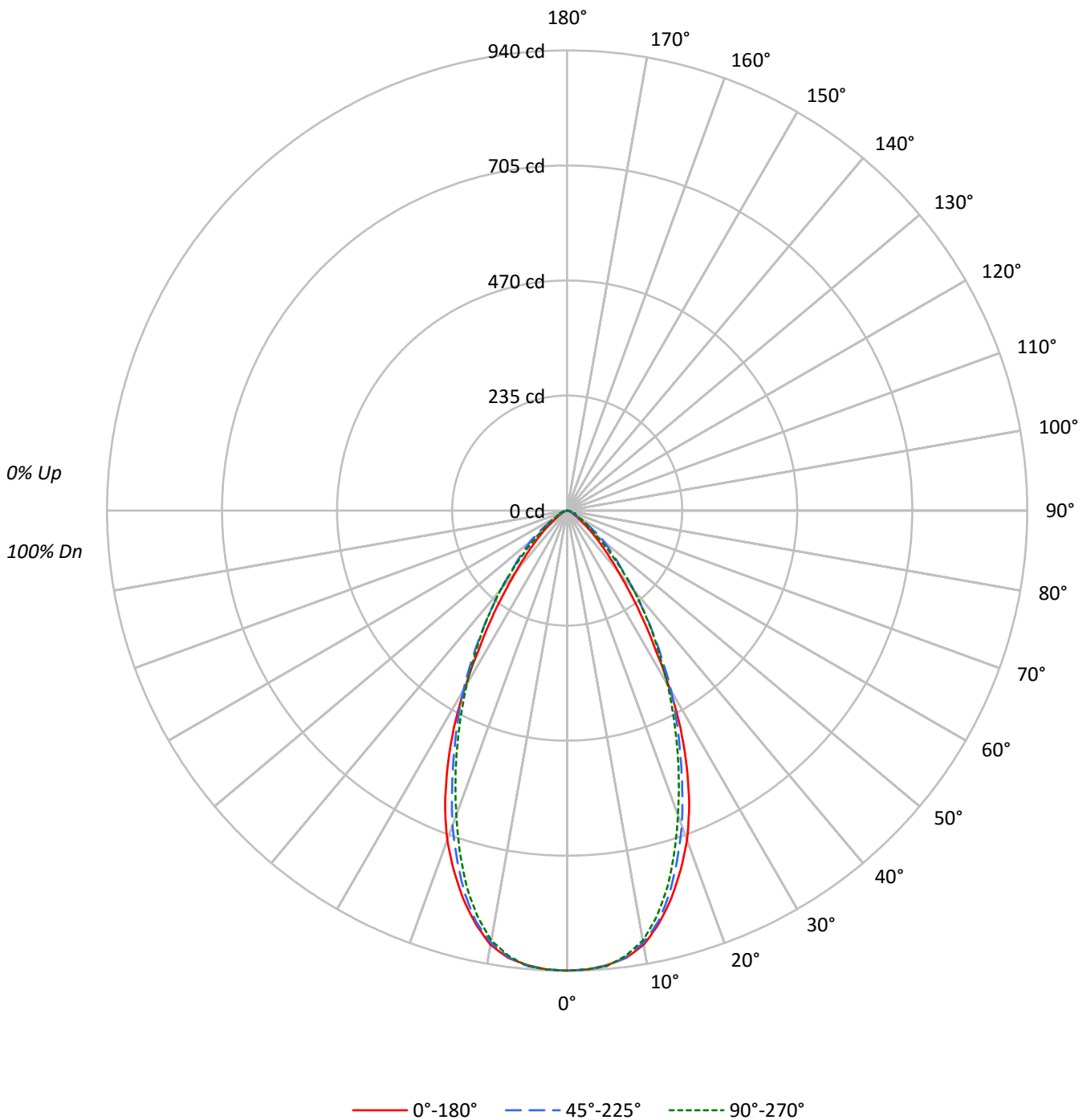
Input Watts (W): 11.9  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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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  | 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 |    |    |    |    | 100 |   |  |   |
| 1   | 113 | 110 | 107 | 105 | 110 | 108 | 105 | 103 | 104 | 102 | 100 | 100 | 98  | 97  | 96  | 95  | 94  |     |    |    |    | 92 |     |   |  |   |
| 2   | 107 | 101 | 97  | 93  | 104 | 99  | 95  | 92  | 96  | 93  | 90  | 93  | 90  | 88  | 90  | 88  | 86  |     |    |    |    | 84 |     |   |  |   |
| 3   | 100 | 93  | 88  | 84  | 98  | 92  | 87  | 83  | 89  | 85  | 81  | 87  | 83  | 80  | 84  | 81  | 79  |     |    |    |    | 77 |     |   |  |   |
| 4   | 95  | 86  | 80  | 76  | 93  | 85  | 80  | 75  | 83  | 78  | 74  | 81  | 77  | 73  | 79  | 76  | 73  |     |    |    |    | 71 |     |   |  |   |
| 5   | 89  | 80  | 74  | 69  | 88  | 79  | 73  | 69  | 77  | 72  | 68  | 76  | 71  | 68  | 74  | 70  | 67  |     |    |    |    | 65 |     |   |  |   |
| 6   | 85  | 75  | 68  | 64  | 83  | 74  | 68  | 63  | 72  | 67  | 63  | 71  | 66  | 63  | 70  | 65  | 62  |     |    |    |    | 61 |     |   |  |   |
| 7   | 80  | 70  | 63  | 59  | 79  | 69  | 63  | 59  | 68  | 62  | 58  | 67  | 62  | 58  | 66  | 61  | 58  |     |    |    |    | 56 |     |   |  |   |
| 8   | 76  | 66  | 59  | 55  | 75  | 65  | 59  | 55  | 64  | 58  | 54  | 63  | 58  | 54  | 62  | 57  | 54  |     |    |    |    | 52 |     |   |  |   |
| 9   | 72  | 62  | 55  | 51  | 71  | 61  | 55  | 51  | 60  | 55  | 51  | 59  | 54  | 51  | 58  | 54  | 50  |     |    |    |    | 49 |     |   |  |   |
| 10  | 68  | 58  | 52  | 48  | 67  | 58  | 52  | 48  | 57  | 51  | 48  | 56  | 51  | 47  | 55  | 51  | 47  |     |    |    |    | 46 |     |   |  |   |

**AVERAGE LUMINANCE (cd/sqm):**

|     | 0°     | 45°    | 90°    |
|-----|--------|--------|--------|
| 0°  | 463629 | 463629 | 463629 |
| 5°  | 461685 | 462428 | 462428 |
| 10° | 451242 | 448988 | 446733 |
| 15° | 419405 | 413275 | 405614 |
| 20° | 375931 | 359392 | 347579 |
| 25° | 314600 | 297451 | 289286 |
| 30° | 237738 | 242011 | 233465 |
| 35° | 161839 | 184426 | 182619 |
| 40° | 104402 | 135382 | 136348 |
| 45° | 67053  | 98452  | 91125  |
| 50° | 42600  | 74914  | 56493  |
| 55° | 25805  | 42579  | 41289  |
| 60° | 16282  | 23682  | 26642  |
| 65° | 12258  | 17512  | 19263  |
| 70° | 10819  | 15147  | 25966  |
| 75° | 8578   | 11438  | 17156  |
| 80° | 4262   | 8524   | 12786  |
| 85° | 0      | 0      | 0      |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 87.9   | 9.6       |
| 10°-20°   | 224.0  | 24.5      |
| 20°-30°   | 252.2  | 27.6      |
| 30°-40°   | 186.6  | 20.4      |
| 40°-50°   | 99.5   | 10.9      |
| 50°-60°   | 40.9   | 4.5       |
| 60°-70°   | 15.9   | 1.7       |
| 70°-80°   | 7.1    | 0.8       |
| 80°-90°   | 0.7    | 0.1       |
| 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°    | 564.2  | 61.7      |
| 0°-40°    | 750.7  | 82.1      |
| 0°-60°    | 891.1  | 97.4      |
| 0°-90°    | 914.8  | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 914.8  | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0°  | 940 | 940   | 940 | 940   | 940 |      |
| 5°  | 932 | 932   | 934 | 934   | 934 | 88   |
| 15° | 821 | 814   | 809 | 799   | 794 | 229  |
| 25° | 578 | 570   | 546 | 536   | 531 | 262  |
| 35° | 269 | 294   | 306 | 303   | 303 | 170  |
| 45° | 96  | 108   | 141 | 140   | 131 | 77   |
| 55° | 30  | 36    | 50  | 46    | 48  | 29   |
| 65° | 10  | 15    | 15  | 18    | 16  | 11   |
| 75° | 4   | 4     | 6   | 9     | 9   | 5    |
| 85° | 0   | 0     | 0   | 0     | 0   | 0    |
| 90° | 0   | 0     | 0   | 0     | 0   | 0    |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°    | 5°    | 10°   | 15°   | 20°   | 22.5° | 25°   | 30°   | 35°   | 40°   | 45°   |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 939.7 | 939.7 | 939.7 | 939.7 | 939.7 | 939.7 | 939.7 | 939.7 | 939.7 | 939.7 | 939.7 |
| 2.5°  | 938.2 | 938.2 | 938.2 | 938.2 | 938.2 | 938.2 | 938.2 | 938.2 | 938.2 | 938.2 | 938.2 |
| 5°    | 932.2 | 932.2 | 932.2 | 932.2 | 932.2 | 932.2 | 932.2 | 933.7 | 932.2 | 933.7 | 933.7 |
| 7.5°  | 921.7 | 920.2 | 920.2 | 920.2 | 920.2 | 920.2 | 920.2 | 920.2 | 920.2 | 920.2 | 920.2 |
| 10°   | 900.7 | 899.2 | 899.2 | 896.2 | 897.7 | 896.2 | 896.2 | 896.2 | 896.2 | 896.2 | 896.2 |
| 12.5° | 864.6 | 864.6 | 863.1 | 861.6 | 860.1 | 860.1 | 860.1 | 860.1 | 860.1 | 860.1 | 860.1 |
| 15°   | 821.1 | 821.1 | 819.6 | 816.6 | 815.1 | 813.6 | 812.1 | 812.1 | 810.6 | 810.6 | 809.1 |
| 17.5° | 770.1 | 770.1 | 767.1 | 764.1 | 761.1 | 759.6 | 756.6 | 753.6 | 752.1 | 750.6 | 747.6 |
| 20°   | 716.0 | 716.0 | 711.5 | 710.0 | 704.0 | 702.5 | 698.0 | 693.5 | 687.5 | 686.0 | 684.5 |
| 22.5° | 651.5 | 648.5 | 647.0 | 647.0 | 642.5 | 639.5 | 636.5 | 630.5 | 621.5 | 618.5 | 614.0 |
| 25°   | 577.9 | 576.4 | 576.4 | 574.9 | 573.4 | 570.4 | 571.9 | 567.4 | 559.9 | 553.9 | 546.4 |
| 27.5° | 501.4 | 499.9 | 498.4 | 499.9 | 502.9 | 502.9 | 501.4 | 498.4 | 495.4 | 487.9 | 483.4 |
| 30°   | 417.3 | 417.3 | 420.3 | 424.8 | 429.3 | 430.8 | 432.3 | 430.8 | 429.3 | 424.8 | 424.8 |
| 32.5° | 334.8 | 337.8 | 340.8 | 351.3 | 355.8 | 358.8 | 360.3 | 364.8 | 364.8 | 364.8 | 361.8 |
| 35°   | 268.7 | 268.7 | 274.7 | 282.2 | 288.2 | 294.2 | 295.7 | 301.7 | 306.2 | 306.2 | 306.2 |
| 37.5° | 208.7 | 210.2 | 216.2 | 222.2 | 229.7 | 232.7 | 235.7 | 244.7 | 250.7 | 253.7 | 255.2 |
| 40°   | 162.1 | 165.1 | 168.1 | 174.1 | 181.6 | 183.1 | 186.1 | 193.6 | 201.2 | 207.2 | 210.2 |
| 42.5° | 126.1 | 126.1 | 129.1 | 133.6 | 138.1 | 142.6 | 145.6 | 150.1 | 159.1 | 163.6 | 169.6 |
| 45°   | 96.1  | 97.6  | 99.1  | 102.1 | 106.6 | 108.1 | 111.1 | 117.1 | 123.1 | 129.1 | 141.1 |
| 47.5° | 73.6  | 73.6  | 75.1  | 76.6  | 81.1  | 82.6  | 84.1  | 90.1  | 96.1  | 108.1 | 117.1 |
| 50°   | 55.5  | 55.5  | 55.5  | 57.0  | 60.0  | 63.0  | 64.5  | 69.1  | 81.1  | 90.1  | 97.6  |
| 52.5° | 40.5  | 40.5  | 40.5  | 43.5  | 45.0  | 46.5  | 48.0  | 54.0  | 69.1  | 70.6  | 73.6  |
| 55°   | 30.0  | 30.0  | 30.0  | 31.5  | 34.5  | 36.0  | 37.5  | 48.0  | 51.0  | 55.5  | 49.5  |
| 57.5° | 22.5  | 22.5  | 22.5  | 24.0  | 25.5  | 27.0  | 30.0  | 37.5  | 42.0  | 36.0  | 34.5  |
| 60°   | 16.5  | 16.5  | 16.5  | 18.0  | 21.0  | 22.5  | 25.5  | 28.5  | 28.5  | 25.5  | 24.0  |
| 62.5° | 13.5  | 13.5  | 13.5  | 13.5  | 16.5  | 19.5  | 19.5  | 22.5  | 19.5  | 18.0  | 18.0  |
| 65°   | 10.5  | 10.5  | 10.5  | 12.0  | 13.5  | 15.0  | 16.5  | 15.0  | 13.5  | 13.5  | 15.0  |
| 67.5° | 9.0   | 9.0   | 9.0   | 9.0   | 12.0  | 12.0  | 12.0  | 10.5  | 10.5  | 10.5  | 12.0  |
| 70°   | 7.5   | 7.5   | 7.5   | 7.5   | 9.0   | 9.0   | 9.0   | 7.5   | 7.5   | 9.0   | 10.5  |
| 72.5° | 6.0   | 6.0   | 6.0   | 7.5   | 7.5   | 7.5   | 6.0   | 6.0   | 6.0   | 7.5   | 7.5   |
| 75°   | 4.5   | 4.5   | 4.5   | 4.5   | 4.5   | 4.5   | 4.5   | 4.5   | 6.0   | 6.0   | 6.0   |
| 77.5° | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 4.5   | 4.5   | 4.5   |
| 80°   | 1.5   | 1.5   | 1.5   | 1.5   | 1.5   | 1.5   | 1.5   | 1.5   | 1.5   | 1.5   | 3.0   |
| 82.5° | 0.0   | 1.5   | 1.5   | 0.0   | 0.0   | 0.0   | 0.0   | 1.5   | 1.5   | 1.5   | 1.5   |
| 85°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 87.5° | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 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°    | 939.7 | 939.7 | 939.7 | 939.7 | 939.7 | 939.7 | 939.7 | 939.7 | 939.7 | 939.7 |
| 2.5°  | 938.2 | 938.2 | 939.7 | 938.2 | 938.2 | 938.2 | 938.2 | 938.2 | 938.2 | 938.2 |
| 5°    | 933.7 | 933.7 | 933.7 | 933.7 | 933.7 | 933.7 | 933.7 | 933.7 | 933.7 | 933.7 |
| 7.5°  | 920.2 | 920.2 | 920.2 | 918.7 | 918.7 | 918.7 | 918.7 | 918.7 | 918.7 | 917.2 |
| 10°   | 896.2 | 896.2 | 894.7 | 893.2 | 894.7 | 891.7 | 891.7 | 890.2 | 890.2 | 891.7 |
| 12.5° | 858.6 | 857.1 | 854.1 | 854.1 | 852.6 | 851.1 | 849.6 | 849.6 | 848.1 | 848.1 |
| 15°   | 809.1 | 806.1 | 803.1 | 801.6 | 798.6 | 800.1 | 798.6 | 795.6 | 795.6 | 794.1 |
| 17.5° | 749.1 | 746.1 | 741.6 | 737.1 | 737.1 | 735.6 | 735.6 | 732.6 | 731.0 | 729.5 |
| 20°   | 680.0 | 678.5 | 677.0 | 672.5 | 671.0 | 668.0 | 665.0 | 665.0 | 660.5 | 662.0 |
| 22.5° | 611.0 | 609.5 | 606.5 | 605.0 | 602.0 | 602.0 | 598.9 | 598.9 | 595.9 | 595.9 |
| 25°   | 544.9 | 543.4 | 540.4 | 538.9 | 535.9 | 535.9 | 532.9 | 534.4 | 531.4 | 531.4 |
| 27.5° | 478.9 | 477.4 | 474.4 | 475.9 | 472.9 | 471.4 | 469.9 | 469.9 | 468.4 | 468.4 |
| 30°   | 418.8 | 414.3 | 414.3 | 412.8 | 411.3 | 411.3 | 411.3 | 408.3 | 408.3 | 409.8 |
| 32.5° | 360.3 | 357.3 | 355.8 | 355.8 | 357.3 | 355.8 | 354.3 | 354.3 | 352.8 | 351.3 |
| 35°   | 306.2 | 304.7 | 303.2 | 303.2 | 303.2 | 303.2 | 303.2 | 303.2 | 303.2 | 303.2 |
| 37.5° | 255.2 | 256.7 | 255.2 | 256.7 | 258.2 | 256.7 | 255.2 | 253.7 | 253.7 | 253.7 |
| 40°   | 211.7 | 214.7 | 216.2 | 213.2 | 211.7 | 211.7 | 210.2 | 211.7 | 210.2 | 211.7 |
| 42.5° | 177.1 | 178.6 | 175.6 | 177.1 | 178.6 | 178.6 | 175.6 | 171.1 | 168.1 | 166.6 |
| 45°   | 144.1 | 147.1 | 154.6 | 144.1 | 139.6 | 138.1 | 133.6 | 132.1 | 130.6 | 130.6 |
| 47.5° | 123.1 | 129.1 | 114.1 | 109.6 | 106.6 | 106.6 | 103.6 | 100.6 | 100.6 | 99.1  |
| 50°   | 100.6 | 88.6  | 85.6  | 82.6  | 79.6  | 78.1  | 76.6  | 75.1  | 75.1  | 73.6  |
| 52.5° | 67.6  | 64.5  | 61.5  | 60.0  | 58.5  | 58.5  | 58.5  | 58.5  | 58.5  | 58.5  |
| 55°   | 48.0  | 46.5  | 45.0  | 46.5  | 46.5  | 48.0  | 49.5  | 49.5  | 49.5  | 48.0  |
| 57.5° | 33.0  | 33.0  | 36.0  | 39.0  | 39.0  | 39.0  | 39.0  | 37.5  | 37.5  | 37.5  |
| 60°   | 25.5  | 27.0  | 30.0  | 30.0  | 30.0  | 31.5  | 30.0  | 28.5  | 27.0  | 27.0  |
| 62.5° | 19.5  | 22.5  | 24.0  | 24.0  | 22.5  | 22.5  | 21.0  | 21.0  | 21.0  | 21.0  |
| 65°   | 16.5  | 18.0  | 18.0  | 18.0  | 18.0  | 16.5  | 15.0  | 15.0  | 16.5  | 16.5  |
| 67.5° | 13.5  | 13.5  | 13.5  | 12.0  | 12.0  | 13.5  | 15.0  | 16.5  | 16.5  | 18.0  |
| 70°   | 10.5  | 10.5  | 10.5  | 12.0  | 13.5  | 13.5  | 16.5  | 16.5  | 18.0  | 18.0  |
| 72.5° | 7.5   | 7.5   | 10.5  | 12.0  | 13.5  | 13.5  | 13.5  | 12.0  | 12.0  | 12.0  |
| 75°   | 6.0   | 7.5   | 10.5  | 9.0   | 9.0   | 9.0   | 9.0   | 9.0   | 9.0   | 9.0   |
| 77.5° | 4.5   | 6.0   | 6.0   | 4.5   | 6.0   | 6.0   | 6.0   | 7.5   | 7.5   | 9.0   |
| 80°   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 4.5   | 4.5   | 4.5   | 4.5   |
| 82.5° | 1.5   | 1.5   | 1.5   | 1.5   | 1.5   | 1.5   | 1.5   | 1.5   | 1.5   | 1.5   |
| 85°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 87.5° | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 90°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |

(END OF REPORT)