

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: P188507

Luminaire Tested: **24SR-LD2-59-C-UNV-L830-CD1-MR-U**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P188507
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24779)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 24SR-LD2-59-C-UNV-L830-CD1-MR-U
Description: METALUX 2X4 SKYRIDGE LED FIXTURE WITH MEDIUM RED SKYTRIM.

Light Source: EATON LED 3000K
Ballast/Driver: OSRAM ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3468.0 lumens
Efficiency: N/A
Efficacy: 69.1 lumens/watt
Spacing Criteria (0/90/45): 1.28 / 2.27 / 2.06
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

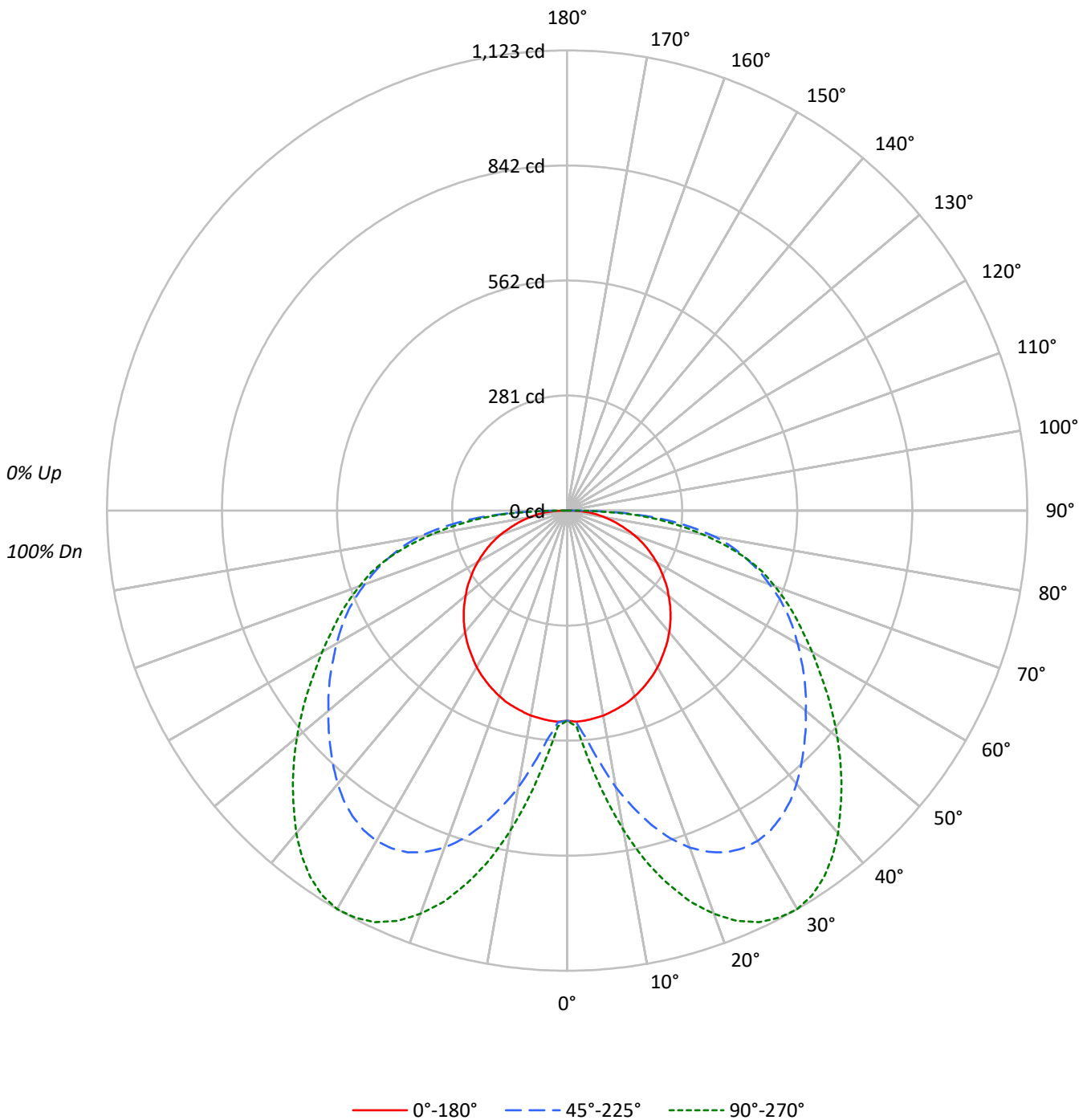
Input Watts (W): 50.2
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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CATALOG NUMBER: 24SR-LD2-59-C-UNV-L830-CD1-MR-U

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 | 0 |
| RCR | | | | | | | | | | | | | | | | | | |
| 0 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |
| 1 | 106 | 100 | 95 | 90 | 103 | 98 | 93 | 88 | 93 | 89 | 85 | 89 | 86 | 83 | 86 | 83 | 80 | 78 |
| 2 | 95 | 85 | 77 | 70 | 92 | 83 | 76 | 69 | 79 | 73 | 68 | 76 | 71 | 66 | 73 | 68 | 64 | 62 |
| 3 | 85 | 73 | 64 | 56 | 83 | 72 | 63 | 56 | 69 | 61 | 55 | 66 | 59 | 54 | 63 | 58 | 53 | 50 |
| 4 | 78 | 64 | 54 | 47 | 75 | 63 | 53 | 46 | 60 | 52 | 46 | 58 | 51 | 45 | 55 | 49 | 44 | 42 |
| 5 | 71 | 57 | 47 | 39 | 69 | 55 | 46 | 39 | 53 | 45 | 39 | 51 | 44 | 38 | 49 | 43 | 38 | 35 |
| 6 | 65 | 50 | 41 | 34 | 63 | 49 | 40 | 33 | 48 | 39 | 33 | 46 | 38 | 33 | 44 | 38 | 32 | 30 |
| 7 | 60 | 45 | 36 | 29 | 58 | 45 | 35 | 29 | 43 | 35 | 29 | 41 | 34 | 29 | 40 | 33 | 28 | 26 |
| 8 | 56 | 41 | 32 | 26 | 54 | 40 | 32 | 26 | 39 | 31 | 25 | 38 | 30 | 25 | 36 | 30 | 25 | 23 |
| 9 | 52 | 38 | 29 | 23 | 50 | 37 | 28 | 23 | 36 | 28 | 23 | 35 | 27 | 22 | 33 | 27 | 22 | 20 |
| 10 | 48 | 34 | 26 | 20 | 47 | 34 | 26 | 20 | 33 | 25 | 20 | 32 | 25 | 20 | 31 | 25 | 20 | 18 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|-----|------|------|
| 0° | 690 | 690 | 690 |
| 5° | 694 | 759 | 826 |
| 10° | 694 | 937 | 1080 |
| 15° | 692 | 1106 | 1310 |
| 20° | 690 | 1253 | 1499 |
| 25° | 688 | 1366 | 1645 |
| 30° | 686 | 1446 | 1745 |
| 35° | 682 | 1498 | 1794 |
| 40° | 680 | 1530 | 1806 |
| 45° | 679 | 1555 | 1801 |
| 50° | 677 | 1591 | 1802 |
| 55° | 677 | 1657 | 1814 |
| 60° | 678 | 1748 | 1858 |
| 65° | 682 | 1887 | 1957 |
| 70° | 682 | 2068 | 2120 |
| 75° | 682 | 2354 | 2362 |
| 80° | 711 | 2833 | 2607 |
| 85° | 832 | 3552 | 3216 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 56.8 | 1.6 |
| 10°-20° | 215.5 | 6.2 |
| 20°-30° | 396.4 | 11.4 |
| 30°-40° | 528.4 | 15.2 |
| 40°-50° | 578.9 | 16.7 |
| 50°-60° | 569.2 | 16.4 |
| 60°-70° | 516.6 | 14.9 |
| 70°-80° | 411.2 | 11.9 |
| 80°-90° | 194.9 | 5.6 |
| 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° | 668.7 | 19.3 |
| 0°-40° | 1197.2 | 34.5 |
| 0°-60° | 2345.3 | 67.6 |
| 0°-90° | 3468.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 3468.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|------|------|
| 0° | 513 | 513 | 513 | 513 | 513 | |
| 5° | 514 | 518 | 562 | 599 | 612 | 49 |
| 15° | 497 | 615 | 794 | 904 | 941 | 140 |
| 25° | 463 | 682 | 920 | 1058 | 1108 | 214 |
| 35° | 415 | 671 | 912 | 1046 | 1092 | 260 |
| 45° | 357 | 604 | 817 | 916 | 947 | 275 |
| 55° | 288 | 534 | 706 | 760 | 773 | 258 |
| 65° | 214 | 462 | 593 | 605 | 615 | 211 |
| 75° | 131 | 360 | 453 | 450 | 454 | 139 |
| 85° | 54 | 194 | 230 | 208 | 208 | 56 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P188507

CATALOG NUMBER: 24SR-LD2-59-C-UNV-L830-CD1-MR-U

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 10° | 15° | 20° | 25° | 30° | 35° | 40° | 45° | 50° |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 512.7 | 512.7 | 512.7 | 512.7 | 512.7 | 512.7 | 512.7 | 512.7 | 512.7 | 512.7 | 512.7 |
| 2.5° | 515.6 | 515.6 | 514.1 | 514.1 | 514.1 | 512.7 | 512.7 | 514.1 | 515.6 | 517.0 | 518.5 |
| 5° | 514.1 | 514.1 | 514.1 | 514.1 | 515.6 | 521.4 | 528.7 | 538.9 | 547.6 | 562.2 | 569.5 |
| 7.5° | 511.2 | 511.2 | 512.7 | 517.0 | 528.7 | 544.7 | 563.6 | 585.5 | 602.9 | 621.9 | 639.4 |
| 10° | 508.3 | 508.3 | 511.2 | 525.8 | 549.1 | 576.7 | 604.4 | 632.1 | 656.8 | 686.0 | 707.8 |
| 12.5° | 502.5 | 502.5 | 511.2 | 537.4 | 572.4 | 607.3 | 642.3 | 678.7 | 710.7 | 741.3 | 771.9 |
| 15° | 496.6 | 496.6 | 514.1 | 550.5 | 594.2 | 636.4 | 677.2 | 719.5 | 757.3 | 793.7 | 825.8 |
| 17.5° | 490.8 | 492.3 | 518.5 | 565.1 | 613.1 | 662.7 | 710.7 | 755.9 | 798.1 | 838.9 | 875.3 |
| 20° | 482.1 | 485.0 | 521.4 | 575.3 | 629.2 | 684.5 | 735.5 | 785.0 | 831.6 | 875.3 | 913.2 |
| 22.5° | 473.3 | 479.2 | 522.8 | 582.6 | 642.3 | 702.0 | 755.9 | 806.8 | 856.4 | 901.5 | 940.8 |
| 25° | 463.1 | 470.4 | 524.3 | 586.9 | 651.0 | 712.2 | 769.0 | 822.9 | 873.8 | 920.4 | 959.8 |
| 27.5° | 452.9 | 463.1 | 521.4 | 586.9 | 653.9 | 718.0 | 774.8 | 830.1 | 884.0 | 929.2 | 971.4 |
| 30° | 441.3 | 454.4 | 517.0 | 585.5 | 653.9 | 716.5 | 774.8 | 831.6 | 884.0 | 930.6 | 971.4 |
| 32.5° | 428.2 | 445.7 | 509.7 | 579.6 | 648.1 | 712.2 | 770.4 | 825.8 | 878.2 | 924.8 | 964.1 |
| 35° | 415.1 | 434.0 | 501.0 | 570.9 | 639.4 | 702.0 | 758.8 | 814.1 | 865.1 | 911.7 | 951.0 |
| 37.5° | 402.0 | 423.8 | 490.8 | 560.7 | 626.3 | 687.4 | 744.2 | 799.6 | 849.1 | 894.2 | 930.6 |
| 40° | 387.4 | 410.7 | 477.7 | 546.1 | 611.7 | 669.9 | 726.7 | 779.2 | 827.2 | 870.9 | 905.9 |
| 42.5° | 372.8 | 397.6 | 463.1 | 531.6 | 594.2 | 652.5 | 707.8 | 758.8 | 805.4 | 844.7 | 876.8 |
| 45° | 356.8 | 383.0 | 448.6 | 514.1 | 575.3 | 633.5 | 687.4 | 735.5 | 780.6 | 817.0 | 846.2 |
| 47.5° | 340.8 | 368.5 | 432.5 | 498.1 | 557.8 | 614.6 | 667.0 | 713.6 | 754.4 | 789.4 | 817.0 |
| 50° | 323.3 | 352.4 | 416.5 | 480.6 | 540.3 | 595.7 | 646.6 | 690.3 | 729.7 | 760.2 | 786.5 |
| 52.5° | 307.3 | 337.9 | 400.5 | 464.6 | 522.8 | 578.2 | 627.7 | 668.5 | 704.9 | 734.0 | 755.9 |
| 55° | 288.4 | 321.9 | 385.9 | 448.6 | 506.8 | 560.7 | 607.3 | 646.6 | 680.1 | 706.4 | 725.3 |
| 57.5° | 270.9 | 305.8 | 369.9 | 432.5 | 489.3 | 543.2 | 586.9 | 624.8 | 653.9 | 677.2 | 694.7 |
| 60° | 252.0 | 289.8 | 353.9 | 416.5 | 473.3 | 525.8 | 568.0 | 602.9 | 630.6 | 649.6 | 664.1 |
| 62.5° | 233.0 | 272.3 | 339.3 | 400.5 | 455.9 | 505.4 | 546.1 | 578.2 | 602.9 | 621.9 | 630.6 |
| 65° | 214.1 | 254.9 | 321.9 | 384.5 | 438.4 | 485.0 | 524.3 | 554.9 | 576.7 | 592.8 | 598.6 |
| 67.5° | 193.7 | 237.4 | 304.4 | 364.1 | 418.0 | 463.1 | 499.5 | 528.7 | 547.6 | 560.7 | 563.6 |
| 70° | 173.3 | 217.0 | 284.0 | 343.7 | 394.7 | 436.9 | 473.3 | 498.1 | 517.0 | 525.8 | 528.7 |
| 72.5° | 151.5 | 196.6 | 263.6 | 320.4 | 368.5 | 410.7 | 442.7 | 469.0 | 485.0 | 490.8 | 490.8 |
| 75° | 131.1 | 174.8 | 240.3 | 294.2 | 340.8 | 380.1 | 410.7 | 434.0 | 448.6 | 452.9 | 451.5 |
| 77.5° | 110.7 | 154.4 | 215.5 | 266.5 | 308.8 | 345.2 | 374.3 | 396.1 | 409.2 | 413.6 | 412.2 |
| 80° | 91.8 | 132.5 | 186.4 | 234.5 | 272.3 | 305.8 | 332.1 | 355.4 | 367.0 | 365.6 | 356.8 |
| 82.5° | 72.8 | 107.8 | 155.8 | 198.1 | 231.6 | 262.2 | 288.4 | 302.9 | 307.3 | 302.9 | 294.2 |
| 85° | 53.9 | 81.6 | 120.9 | 154.4 | 182.0 | 206.8 | 222.8 | 233.0 | 234.5 | 230.1 | 222.8 |
| 87.5° | 32.0 | 48.1 | 71.4 | 91.8 | 112.1 | 123.8 | 132.5 | 139.8 | 141.3 | 136.9 | 134.0 |
| 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: P188507

CATALOG NUMBER: 24SR-LD2-59-C-UNV-L830-CD1-MR-U

CANDELA DISTRIBUTION (continued):

| | 55° | 60° | 65° | 70° | 75° | 80° | 85° | 90° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 512.7 | 512.7 | 512.7 | 512.7 | 512.7 | 512.7 | 512.7 | 512.7 |
| 2.5° | 519.9 | 521.4 | 522.8 | 525.8 | 524.3 | 525.8 | 525.8 | 527.2 |
| 5° | 579.6 | 588.4 | 594.2 | 602.9 | 602.9 | 607.3 | 608.8 | 611.7 |
| 7.5° | 652.5 | 664.1 | 677.2 | 690.3 | 691.8 | 699.1 | 702.0 | 702.0 |
| 10° | 726.7 | 742.8 | 758.8 | 773.3 | 777.7 | 786.5 | 790.8 | 790.8 |
| 12.5° | 793.7 | 811.2 | 833.1 | 849.1 | 854.9 | 865.1 | 870.9 | 872.4 |
| 15° | 852.0 | 873.8 | 895.7 | 913.2 | 923.4 | 933.6 | 939.4 | 940.8 |
| 17.5° | 901.5 | 927.7 | 951.0 | 968.5 | 980.2 | 991.8 | 999.1 | 1000.5 |
| 20° | 940.8 | 970.0 | 993.3 | 1012.2 | 1025.3 | 1039.9 | 1045.7 | 1047.1 |
| 22.5° | 971.4 | 999.1 | 1025.3 | 1045.7 | 1060.3 | 1074.8 | 1082.1 | 1083.6 |
| 25° | 991.8 | 1020.9 | 1047.1 | 1069.0 | 1085.0 | 1098.1 | 1105.4 | 1108.3 |
| 27.5° | 1003.5 | 1034.0 | 1060.3 | 1080.6 | 1096.7 | 1111.2 | 1118.5 | 1120.0 |
| 30° | 1004.9 | 1035.5 | 1061.7 | 1082.1 | 1098.1 | 1112.7 | 1120.0 | 1122.9 |
| 32.5° | 997.6 | 1028.2 | 1053.0 | 1073.4 | 1089.4 | 1102.5 | 1109.8 | 1112.7 |
| 35° | 983.1 | 1012.2 | 1037.0 | 1055.9 | 1070.5 | 1082.1 | 1090.8 | 1092.3 |
| 37.5° | 962.7 | 990.3 | 1012.2 | 1029.7 | 1044.2 | 1055.9 | 1063.2 | 1063.2 |
| 40° | 935.0 | 961.2 | 980.2 | 996.2 | 1010.7 | 1019.5 | 1028.2 | 1028.2 |
| 42.5° | 904.4 | 929.2 | 946.7 | 961.2 | 971.4 | 981.6 | 987.4 | 987.4 |
| 45° | 872.4 | 892.8 | 910.2 | 921.9 | 932.1 | 939.4 | 946.7 | 946.7 |
| 47.5° | 840.3 | 857.8 | 870.9 | 882.6 | 891.3 | 898.6 | 904.4 | 904.4 |
| 50° | 806.8 | 822.9 | 833.1 | 843.3 | 850.5 | 856.4 | 860.7 | 860.7 |
| 52.5° | 773.3 | 786.5 | 793.7 | 802.5 | 808.3 | 814.1 | 817.0 | 817.0 |
| 55° | 741.3 | 750.0 | 755.9 | 763.2 | 767.5 | 770.4 | 773.3 | 773.3 |
| 57.5° | 706.4 | 712.2 | 718.0 | 722.4 | 725.3 | 728.2 | 731.1 | 729.7 |
| 60° | 671.4 | 675.8 | 680.1 | 683.0 | 686.0 | 688.9 | 690.3 | 690.3 |
| 62.5° | 636.4 | 637.9 | 639.4 | 645.2 | 648.1 | 649.6 | 651.0 | 651.0 |
| 65° | 601.5 | 601.5 | 602.9 | 607.3 | 610.2 | 613.1 | 614.6 | 614.6 |
| 67.5° | 563.6 | 565.1 | 566.5 | 570.9 | 572.4 | 575.3 | 578.2 | 578.2 |
| 70° | 525.8 | 527.2 | 527.2 | 531.6 | 533.0 | 536.0 | 538.9 | 538.9 |
| 72.5° | 489.3 | 489.3 | 489.3 | 492.3 | 495.2 | 498.1 | 501.0 | 501.0 |
| 75° | 448.6 | 448.6 | 448.6 | 451.5 | 451.5 | 452.9 | 455.9 | 454.4 |
| 77.5° | 404.9 | 400.5 | 396.1 | 394.7 | 394.7 | 396.1 | 397.6 | 397.6 |
| 80° | 348.1 | 342.3 | 339.3 | 336.4 | 335.0 | 336.4 | 337.9 | 336.4 |
| 82.5° | 288.4 | 281.1 | 276.7 | 275.3 | 275.3 | 275.3 | 276.7 | 273.8 |
| 85° | 218.5 | 211.2 | 208.3 | 208.3 | 206.8 | 206.8 | 206.8 | 208.3 |
| 87.5° | 131.1 | 126.7 | 122.3 | 123.8 | 122.3 | 120.9 | 122.3 | 125.3 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)