

Scaled data based on original data using

LM-41-14 Approved Method for Photometric Testing Of Indoor Fluorescent Luminaires

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: io LED

Report Number: P209432

Luminaire Tested: **LDSQ6B20D010 EU6B10208030 6LBCSSQ1MMS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209432
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P35359)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDSQ6B20D010 EU6B10208030 6LBCSSQ1MMS
Description: PORTFOLIO LD6 SERIES 6" RECESSED FIXTURE WITH A SQUARE SHALLOW CAST METALLIC SILVER TRIM
MEDIUM DISTRIBUTION WITH MATTE METALLIC SILVER TRIM
WATTAGE D010TR-21.86 W DE010-20.46 W D5LT-21.24 W DMX-20.89 W DL2-22.5 W DL3-21.8 6 W DLE-22.46 W
Light Source: HIGH LUMEN LED 3000 K
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2217.7 lumens
Efficiency: N/A
Efficacy: 106.6 lumens/watt
Spacing Criteria (0/90/45): 1.24 / 1.22 / 1.33
Luminous Opening: Point Source (0' x 0' x 0')
CIE Type: Direct

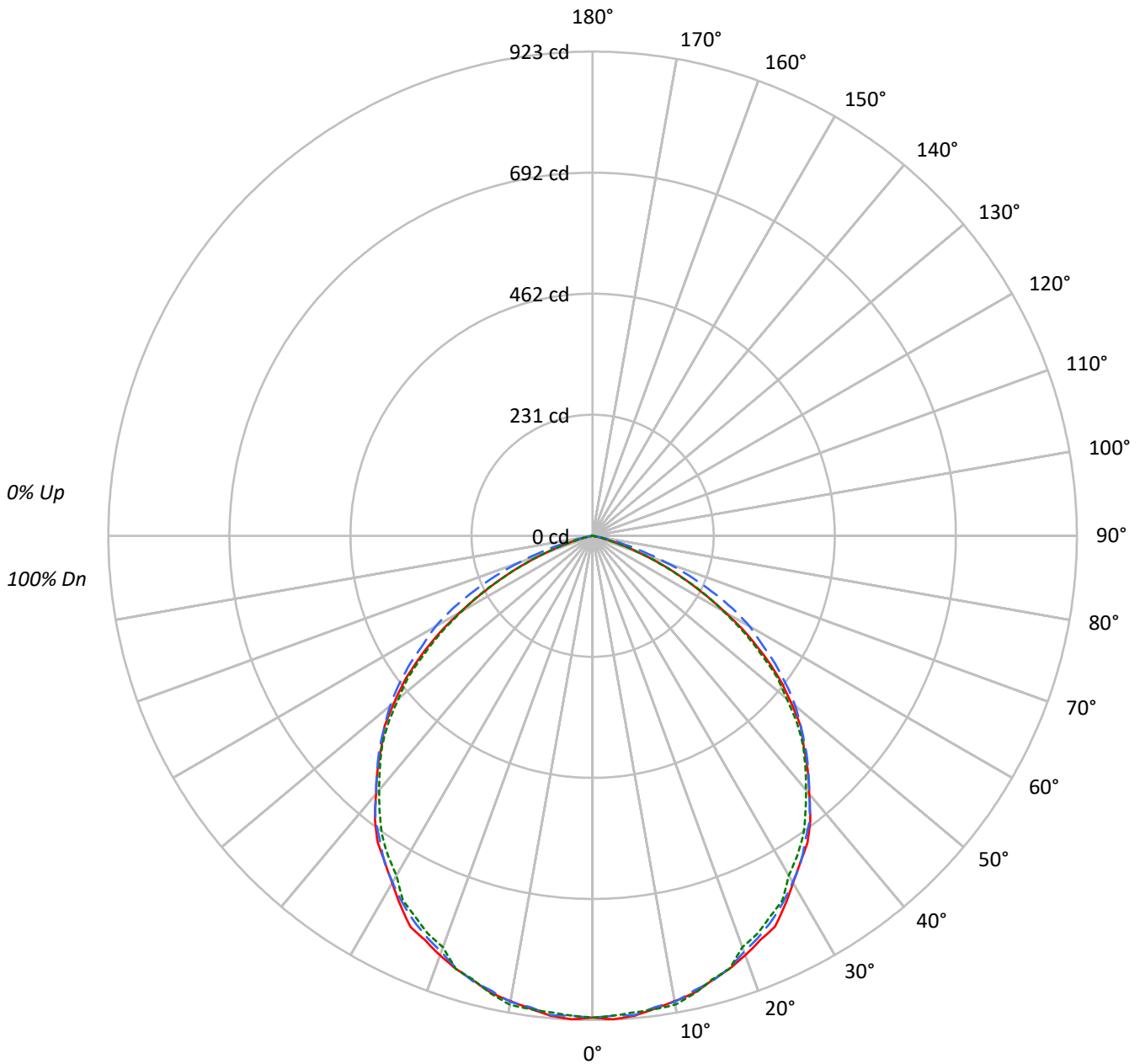
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P209432

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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|---|--|--|--|--|--|--|----|--|--|--|--|--|--|--|--|---|
| RF | 20 | | | | | | | | | 20 | | | | | | | | | 20 | | | | | | | | | 20 | | | | | | | | | |
| RC | 80 | | | | | | | | | 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 | 0 | | | | | | | | | | | | | | | | |
| RCR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 | | | | | | | | | | | | | | | | | | | |
| 1 | 111 | 107 | 103 | 100 | 108 | 104 | 101 | 98 | 100 | 97 | 95 | 96 | 94 | 92 | 93 | 91 | 89 | 87 | | | | | | | | | | | | | | | | | | | |
| 2 | 102 | 94 | 88 | 83 | 99 | 93 | 87 | 82 | 89 | 84 | 80 | 86 | 82 | 79 | 83 | 80 | 77 | 75 | | | | | | | | | | | | | | | | | | | |
| 3 | 93 | 84 | 76 | 70 | 91 | 82 | 75 | 70 | 79 | 73 | 69 | 77 | 72 | 67 | 74 | 70 | 66 | 64 | | | | | | | | | | | | | | | | | | | |
| 4 | 86 | 75 | 67 | 60 | 84 | 73 | 66 | 60 | 71 | 64 | 59 | 69 | 63 | 58 | 67 | 62 | 58 | 56 | | | | | | | | | | | | | | | | | | | |
| 5 | 79 | 67 | 59 | 52 | 77 | 66 | 58 | 52 | 64 | 57 | 52 | 62 | 56 | 51 | 60 | 55 | 51 | 49 | | | | | | | | | | | | | | | | | | | |
| 6 | 73 | 61 | 52 | 46 | 71 | 60 | 52 | 46 | 58 | 51 | 45 | 56 | 50 | 45 | 55 | 49 | 45 | 43 | | | | | | | | | | | | | | | | | | | |
| 7 | 68 | 55 | 47 | 41 | 66 | 54 | 46 | 41 | 53 | 46 | 40 | 51 | 45 | 40 | 50 | 44 | 40 | 38 | | | | | | | | | | | | | | | | | | | |
| 8 | 63 | 50 | 42 | 37 | 62 | 50 | 42 | 36 | 48 | 41 | 36 | 47 | 41 | 36 | 46 | 40 | 36 | 34 | | | | | | | | | | | | | | | | | | | |
| 9 | 59 | 46 | 38 | 33 | 58 | 46 | 38 | 33 | 45 | 38 | 33 | 43 | 37 | 33 | 42 | 37 | 32 | 31 | | | | | | | | | | | | | | | | | | | |
| 10 | 55 | 43 | 35 | 30 | 54 | 42 | 35 | 30 | 41 | 34 | 30 | 40 | 34 | 30 | 39 | 34 | 30 | 28 | | | | | | | | | | | | | | | | | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|--|-----|-----|
| 0° | Luminaire represents a point source (luminous area is zero). | | |
| 5° | No luminance values can be calculated. | | |
| 10° | | | |
| 15° | | | |
| 20° | | | |
| 25° | | | |
| 30° | | | |
| 35° | | | |
| 40° | | | |
| 45° | | | |
| 50° | | | |
| 55° | | | |
| 60° | | | |
| 65° | | | |
| 70° | | | |
| 75° | | | |
| 80° | | | |
| 85° | | | |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 86.9 | 3.9 |
| 10°-20° | 247.7 | 11.2 |
| 20°-30° | 372.8 | 16.8 |
| 30°-40° | 441.0 | 19.9 |
| 40°-50° | 440.1 | 19.8 |
| 50°-60° | 364.9 | 16.5 |
| 60°-70° | 213.2 | 9.6 |
| 70°-80° | 50.8 | 2.3 |
| 80°-90° | 0.4 | 0.0 |
| 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° | 707.4 | 31.9 |
| 0°-40° | 1148.3 | 51.8 |
| 0°-60° | 1953.3 | 88.1 |
| 0°-90° | 2217.7 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 2217.7 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 918 | 918 | 918 | 918 | 918 | |
| 5° | 918 | 914 | 917 | 914 | 912 | 87 |
| 15° | 878 | 877 | 879 | 875 | 876 | 248 |
| 25° | 822 | 813 | 809 | 806 | 801 | 376 |
| 35° | 714 | 707 | 707 | 703 | 699 | 444 |
| 45° | 569 | 570 | 574 | 568 | 568 | 440 |
| 55° | 400 | 414 | 424 | 413 | 390 | 355 |
| 65° | 188 | 212 | 249 | 211 | 187 | 187 |
| 75° | 27 | 39 | 61 | 39 | 26 | 37 |
| 85° | 0 | 0 | 0 | 0 | 0 | 0 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 10° | 15° | 20° | 25° | 30° | 35° | 40° | 45° | 50° |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 918.5 | 918.5 | 918.5 | 918.5 | 918.5 | 918.5 | 918.5 | 918.5 | 918.5 | 918.5 | 918.5 |
| 2.5° | 922.6 | 917.2 | 921.2 | 913.1 | 918.5 | 913.1 | 914.5 | 911.8 | 917.2 | 915.8 | 914.5 |
| 5° | 918.5 | 919.9 | 917.2 | 919.9 | 915.8 | 911.8 | 915.8 | 913.1 | 905.0 | 917.2 | 914.5 |
| 7.5° | 909.1 | 910.4 | 907.7 | 911.8 | 909.1 | 903.6 | 914.5 | 906.3 | 905.0 | 906.3 | 911.8 |
| 10° | 900.9 | 903.6 | 902.3 | 900.9 | 902.3 | 902.3 | 899.6 | 895.5 | 899.6 | 902.3 | 900.9 |
| 12.5° | 892.8 | 896.9 | 894.1 | 891.4 | 888.7 | 890.1 | 892.8 | 886.0 | 886.0 | 888.7 | 896.9 |
| 15° | 877.9 | 880.6 | 882.0 | 876.5 | 876.5 | 877.9 | 883.3 | 872.5 | 877.9 | 879.2 | 880.6 |
| 17.5° | 865.7 | 867.1 | 867.1 | 863.0 | 865.7 | 861.6 | 865.7 | 860.3 | 865.7 | 864.3 | 867.1 |
| 20° | 850.8 | 853.5 | 850.8 | 850.8 | 848.1 | 849.4 | 849.4 | 849.4 | 845.4 | 844.0 | 846.7 |
| 22.5° | 834.5 | 834.5 | 831.8 | 834.5 | 831.8 | 830.5 | 837.2 | 826.4 | 837.2 | 827.8 | 835.9 |
| 25° | 822.3 | 815.6 | 811.5 | 810.2 | 815.6 | 810.2 | 812.9 | 808.8 | 811.5 | 808.8 | 810.2 |
| 27.5° | 793.9 | 789.8 | 788.5 | 789.8 | 789.8 | 788.5 | 793.9 | 779.0 | 788.5 | 787.1 | 787.1 |
| 30° | 764.1 | 764.1 | 766.8 | 764.1 | 766.8 | 762.7 | 768.2 | 756.0 | 764.1 | 762.7 | 764.1 |
| 32.5° | 737.0 | 738.4 | 738.4 | 741.1 | 737.0 | 738.4 | 738.4 | 734.3 | 737.0 | 738.4 | 735.6 |
| 35° | 714.0 | 707.2 | 707.2 | 707.2 | 707.2 | 707.2 | 709.9 | 705.8 | 709.9 | 707.2 | 707.2 |
| 37.5° | 681.5 | 674.7 | 674.7 | 673.3 | 680.1 | 676.0 | 682.8 | 677.4 | 677.4 | 680.1 | 680.1 |
| 40° | 642.2 | 644.9 | 640.8 | 646.2 | 644.9 | 639.5 | 651.6 | 643.5 | 648.9 | 642.2 | 647.6 |
| 42.5° | 606.9 | 608.3 | 606.9 | 605.6 | 611.0 | 609.6 | 615.1 | 609.6 | 608.3 | 608.3 | 617.8 |
| 45° | 569.0 | 569.0 | 569.0 | 573.1 | 569.0 | 570.4 | 575.8 | 573.1 | 575.8 | 574.4 | 583.9 |
| 47.5° | 537.8 | 531.1 | 529.7 | 537.8 | 536.5 | 537.8 | 537.8 | 539.2 | 540.6 | 537.8 | 541.9 |
| 50° | 493.1 | 490.4 | 490.4 | 491.8 | 493.1 | 495.8 | 499.9 | 502.6 | 499.9 | 504.0 | 505.3 |
| 52.5° | 449.8 | 447.1 | 448.4 | 453.8 | 456.6 | 455.2 | 462.0 | 463.3 | 462.0 | 464.7 | 464.7 |
| 55° | 399.7 | 396.9 | 401.0 | 407.8 | 411.9 | 415.9 | 422.7 | 417.3 | 422.7 | 424.0 | 425.4 |
| 57.5° | 348.2 | 346.8 | 348.2 | 355.0 | 359.0 | 368.5 | 379.3 | 379.3 | 384.8 | 380.7 | 384.8 |
| 60° | 291.3 | 291.3 | 296.7 | 300.8 | 311.6 | 318.4 | 329.2 | 334.6 | 340.0 | 345.5 | 342.8 |
| 62.5° | 237.1 | 238.4 | 242.5 | 252.0 | 258.8 | 268.2 | 280.4 | 285.9 | 295.3 | 300.8 | 298.0 |
| 65° | 188.3 | 188.3 | 191.0 | 199.2 | 205.9 | 218.1 | 229.0 | 241.1 | 246.6 | 249.3 | 250.6 |
| 67.5° | 140.9 | 139.5 | 145.0 | 150.4 | 157.2 | 169.3 | 181.5 | 188.3 | 197.8 | 200.5 | 199.2 |
| 70° | 94.8 | 96.2 | 98.9 | 104.3 | 112.4 | 121.9 | 135.5 | 140.9 | 146.3 | 149.0 | 146.3 |
| 72.5° | 59.6 | 59.6 | 61.0 | 66.4 | 71.8 | 78.6 | 88.1 | 93.5 | 100.3 | 101.6 | 98.9 |
| 75° | 27.1 | 27.1 | 29.8 | 32.5 | 36.6 | 42.0 | 48.8 | 52.8 | 56.9 | 61.0 | 61.0 |
| 77.5° | 5.4 | 6.8 | 8.1 | 8.1 | 10.8 | 14.9 | 19.0 | 23.0 | 27.1 | 27.1 | 27.1 |
| 80° | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 2.7 | 4.1 | 6.8 | 6.8 | 6.8 |
| 82.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 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):

| | 55° | 60° | 65° | 70° | 75° | 80° | 85° | 90° |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 918.5 | 918.5 | 918.5 | 918.5 | 918.5 | 918.5 | 918.5 | 918.5 |
| 2.5° | 918.5 | 926.7 | 918.5 | 914.5 | 919.9 | 918.5 | 914.5 | 915.8 |
| 5° | 914.5 | 917.2 | 919.9 | 909.1 | 915.8 | 917.2 | 914.5 | 911.8 |
| 7.5° | 910.4 | 911.8 | 910.4 | 907.7 | 907.7 | 907.7 | 910.4 | 910.4 |
| 10° | 909.1 | 905.0 | 898.2 | 894.1 | 898.2 | 898.2 | 896.9 | 907.7 |
| 12.5° | 891.4 | 896.9 | 892.8 | 884.7 | 892.8 | 891.4 | 891.4 | 894.1 |
| 15° | 877.9 | 877.9 | 880.6 | 869.8 | 875.2 | 873.8 | 873.8 | 876.5 |
| 17.5° | 864.3 | 864.3 | 863.0 | 860.3 | 858.9 | 863.0 | 858.9 | 865.7 |
| 20° | 845.4 | 848.1 | 856.2 | 842.7 | 846.7 | 842.7 | 842.7 | 834.5 |
| 22.5° | 822.3 | 835.9 | 829.1 | 827.8 | 826.4 | 827.8 | 830.5 | 821.0 |
| 25° | 807.4 | 807.4 | 810.2 | 802.0 | 802.0 | 804.7 | 803.4 | 800.7 |
| 27.5° | 787.1 | 785.8 | 784.4 | 781.7 | 788.5 | 783.1 | 783.1 | 783.1 |
| 30° | 758.7 | 762.7 | 761.4 | 754.6 | 762.7 | 760.0 | 756.0 | 747.8 |
| 32.5° | 734.3 | 739.7 | 731.6 | 730.2 | 728.9 | 730.2 | 731.6 | 724.8 |
| 35° | 704.5 | 705.8 | 705.8 | 700.4 | 701.8 | 700.4 | 697.7 | 699.1 |
| 37.5° | 677.4 | 676.0 | 669.3 | 666.5 | 667.9 | 667.9 | 669.3 | 666.5 |
| 40° | 639.5 | 643.5 | 643.5 | 634.0 | 636.7 | 634.0 | 634.0 | 632.7 |
| 42.5° | 608.3 | 609.6 | 605.6 | 601.5 | 601.5 | 600.2 | 597.5 | 600.2 |
| 45° | 575.8 | 574.4 | 570.4 | 566.3 | 566.3 | 564.9 | 562.2 | 567.6 |
| 47.5° | 539.2 | 536.5 | 535.1 | 529.7 | 529.7 | 521.6 | 522.9 | 528.4 |
| 50° | 502.6 | 499.9 | 494.5 | 491.8 | 487.7 | 483.7 | 482.3 | 482.3 |
| 52.5° | 459.3 | 459.3 | 453.8 | 448.4 | 447.1 | 444.4 | 441.7 | 443.0 |
| 55° | 421.3 | 421.3 | 417.3 | 407.8 | 402.4 | 395.6 | 391.5 | 390.2 |
| 57.5° | 378.0 | 375.3 | 367.1 | 356.3 | 350.9 | 345.5 | 341.4 | 341.4 |
| 60° | 334.6 | 327.9 | 319.7 | 310.2 | 300.8 | 291.3 | 288.6 | 287.2 |
| 62.5° | 287.2 | 280.4 | 265.5 | 254.7 | 247.9 | 242.5 | 237.1 | 241.1 |
| 65° | 239.8 | 230.3 | 216.8 | 205.9 | 199.2 | 191.0 | 187.0 | 187.0 |
| 67.5° | 189.7 | 180.2 | 166.6 | 155.8 | 149.0 | 143.6 | 138.2 | 138.2 |
| 70° | 139.5 | 132.8 | 120.6 | 111.1 | 105.7 | 97.5 | 96.2 | 96.2 |
| 72.5° | 94.8 | 86.7 | 77.2 | 70.4 | 65.0 | 59.6 | 56.9 | 55.5 |
| 75° | 52.8 | 47.4 | 40.6 | 36.6 | 31.2 | 28.5 | 25.7 | 25.7 |
| 77.5° | 21.7 | 17.6 | 13.5 | 10.8 | 8.1 | 6.8 | 5.4 | 6.8 |
| 80° | 4.1 | 2.7 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 |
| 82.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 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 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



Report Generated By E9808895 / USPTCWHP6082093





— 0°-180° - - 45°-225° - - - - 90°-270°









(END OF REPORT)