

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: PORTFOLIO

Report Number: P840246

Luminaire Tested: **LD4C70D010 EU4709050 4LBCSSQMMS**

Issue Date: 5/25/2022

This test was performed under the Supervised Manufacturer's Testing Program. The results of this test have not been influenced by sources from within Cooper Lighting Solutions or from external interests.



**Test Information**

Test Method: LM-79-08  
Report Number: P840246  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P209253)  
Test Lab: INNOVATION CENTER  
Issue Date: 5/25/2022  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: PORTFOLIO  
Catalog Number: LD4C70D010 EU4709050 4LBCSSQMMS  
Description: 4 INCH 7000 LUMEN PORTFOLIO LED DOWNLIGHT WITH, 5000K, 90CRI LEDS  
AND 4LBCSSQ TRIM WITH MMS FINISH  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

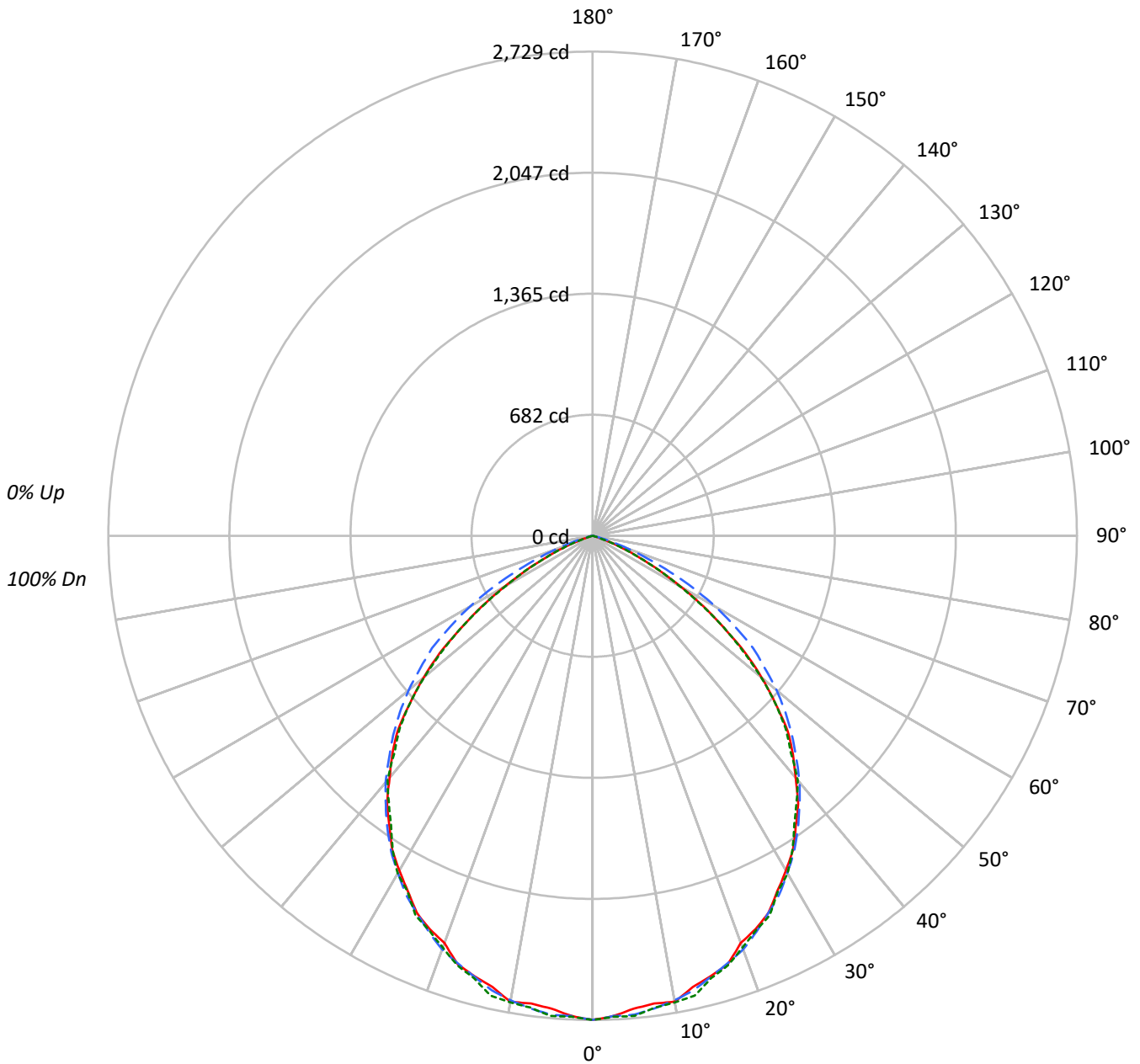
Lumens per Lamp: N/A  
Luminaire Lumens: 5829.0 lumens  
Efficiency: N/A  
Efficacy: 74.7 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.2 / 1.29  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
CIE Type: Direct

Input Watts (W): 78  
Input Voltage (V):  
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

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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 | 0  |  |  |  |  |   |
| RCR |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |  |  |  |  |   |
| 0   | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |    |    |    |  |  |  |  |   |
| 1   | 111 | 108 | 104 | 101 | 109 | 105 | 102 | 100 | 101 | 99  | 96  | 97  | 95  | 94  | 94  | 92  | 91  | 89  |    |    |    |  |  |  |  |   |
| 2   | 103 | 96  | 91  | 86  | 100 | 94  | 89  | 85  | 91  | 87  | 83  | 88  | 84  | 81  | 85  | 82  | 79  | 77  |    |    |    |  |  |  |  |   |
| 3   | 95  | 86  | 79  | 74  | 93  | 85  | 78  | 73  | 82  | 76  | 72  | 79  | 74  | 71  | 77  | 73  | 69  | 67  |    |    |    |  |  |  |  |   |
| 4   | 88  | 77  | 70  | 64  | 86  | 76  | 69  | 63  | 74  | 67  | 63  | 71  | 66  | 62  | 69  | 65  | 61  | 59  |    |    |    |  |  |  |  |   |
| 5   | 81  | 70  | 62  | 56  | 79  | 69  | 61  | 56  | 67  | 60  | 55  | 65  | 59  | 54  | 63  | 58  | 54  | 52  |    |    |    |  |  |  |  |   |
| 6   | 75  | 63  | 55  | 49  | 73  | 62  | 55  | 49  | 61  | 54  | 49  | 59  | 53  | 48  | 57  | 52  | 48  | 46  |    |    |    |  |  |  |  |   |
| 7   | 70  | 58  | 50  | 44  | 68  | 57  | 49  | 44  | 55  | 49  | 44  | 54  | 48  | 43  | 53  | 47  | 43  | 41  |    |    |    |  |  |  |  |   |
| 8   | 65  | 53  | 45  | 40  | 64  | 52  | 45  | 39  | 51  | 44  | 39  | 50  | 44  | 39  | 49  | 43  | 39  | 37  |    |    |    |  |  |  |  |   |
| 9   | 61  | 49  | 41  | 36  | 60  | 48  | 41  | 36  | 47  | 40  | 36  | 46  | 40  | 35  | 45  | 39  | 35  | 33  |    |    |    |  |  |  |  |   |
| 10  | 57  | 45  | 38  | 33  | 56  | 44  | 37  | 33  | 44  | 37  | 32  | 43  | 37  | 32  | 42  | 36  | 32  | 31  |    |    |    |  |  |  |  |   |

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

|     | 0°     | 45°    | 90°    |
|-----|--------|--------|--------|
| 0°  | 263289 | 263289 | 263289 |
| 5°  | 259045 | 262416 | 263162 |
| 10° | 261276 | 260522 | 261649 |
| 15° | 256704 | 257084 | 257863 |
| 20° | 250738 | 254711 | 253530 |
| 25° | 249647 | 249647 | 251297 |
| 30° | 242686 | 244413 | 244858 |
| 35° | 235123 | 237408 | 233297 |
| 40° | 224091 | 228474 | 226522 |
| 45° | 212080 | 216856 | 209965 |
| 50° | 186782 | 203054 | 185611 |
| 55° | 151266 | 185819 | 151922 |
| 60° | 110692 | 154093 | 108454 |
| 65° | 67261  | 109727 | 65503  |
| 70° | 26237  | 59075  | 25165  |
| 75° | 2871   | 15919  | 2871   |
| 80° | 2223   | 2223   | 2223   |
| 85° | 0      | 0      | 0      |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 257.6  | 4.4       |
| 10°-20°   | 728.9  | 12.5      |
| 20°-30°   | 1081.5 | 18.6      |
| 30°-40°   | 1253.1 | 21.5      |
| 40°-50°   | 1201.4 | 20.6      |
| 50°-60°   | 883.4  | 15.2      |
| 60°-70°   | 381.5  | 6.5       |
| 70°-80°   | 41.2   | 0.7       |
| 80°-90°   | 0.5    | 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°    | 2067.9 | 35.5      |
| 0°-40°    | 3321.0 | 57.0      |
| 0°-60°    | 5405.7 | 92.7      |
| 0°-90°    | 5829.0 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 5829.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 2729 | 2729  | 2729 | 2729  | 2729 |      |
| 5°  | 2674 | 2702  | 2709 | 2713  | 2717 | 255  |
| 15° | 2570 | 2585  | 2574 | 2578  | 2581 | 724  |
| 25° | 2345 | 2341  | 2345 | 2349  | 2360 | 1074 |
| 35° | 1996 | 2008  | 2016 | 2012  | 1981 | 1248 |
| 45° | 1554 | 1558  | 1589 | 1566  | 1539 | 1181 |
| 55° | 899  | 992   | 1105 | 988   | 903  | 809  |
| 65° | 295  | 368   | 481  | 364   | 287  | 303  |
| 75° | 8    | 12    | 43   | 8     | 8    | 24   |
| 85° | 0    | 0     | 0    | 0     | 0    | 1    |
| 90° | 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°    | 2728.7 | 2728.7 | 2728.7 | 2728.7 | 2728.7 | 2728.7 | 2728.7 | 2728.7 | 2728.7 | 2728.7 | 2728.7 |
| 2.5°  | 2709.3 | 2740.3 | 2744.2 | 2724.8 | 2717.0 | 2705.5 | 2732.5 | 2713.2 | 2721.0 | 2713.2 | 2709.3 |
| 5°    | 2674.5 | 2709.3 | 2713.2 | 2713.2 | 2705.5 | 2701.5 | 2713.2 | 2709.3 | 2705.5 | 2697.7 | 2709.3 |
| 7.5°  | 2659.0 | 2678.3 | 2697.7 | 2674.5 | 2686.0 | 2682.2 | 2709.3 | 2697.7 | 2693.8 | 2693.8 | 2686.0 |
| 10°   | 2666.7 | 2662.8 | 2678.3 | 2655.0 | 2662.8 | 2655.0 | 2678.3 | 2678.3 | 2670.5 | 2662.8 | 2659.0 |
| 12.5° | 2604.6 | 2635.6 | 2635.6 | 2631.8 | 2624.0 | 2612.3 | 2635.6 | 2651.2 | 2627.8 | 2627.8 | 2624.0 |
| 15°   | 2569.8 | 2577.6 | 2581.4 | 2581.4 | 2577.6 | 2585.3 | 2596.8 | 2581.4 | 2585.3 | 2565.9 | 2573.6 |
| 17.5° | 2531.1 | 2515.6 | 2527.1 | 2519.4 | 2523.3 | 2531.1 | 2546.6 | 2546.6 | 2523.3 | 2519.4 | 2527.1 |
| 20°   | 2441.9 | 2488.4 | 2492.3 | 2469.1 | 2472.9 | 2472.9 | 2500.1 | 2476.8 | 2492.3 | 2472.9 | 2480.6 |
| 22.5° | 2399.2 | 2430.2 | 2434.1 | 2403.1 | 2422.4 | 2399.2 | 2426.4 | 2391.4 | 2430.2 | 2403.1 | 2414.7 |
| 25°   | 2344.9 | 2341.1 | 2352.7 | 2337.2 | 2341.1 | 2341.1 | 2360.4 | 2344.9 | 2356.6 | 2341.1 | 2344.9 |
| 27.5° | 2255.9 | 2286.9 | 2282.9 | 2267.4 | 2275.2 | 2271.4 | 2310.1 | 2267.4 | 2290.7 | 2271.4 | 2279.1 |
| 30°   | 2178.2 | 2205.4 | 2197.7 | 2182.2 | 2182.2 | 2170.5 | 2213.2 | 2201.5 | 2197.7 | 2197.7 | 2193.7 |
| 32.5° | 2100.8 | 2104.7 | 2097.0 | 2100.8 | 2104.7 | 2089.2 | 2124.0 | 2108.5 | 2104.7 | 2108.5 | 2112.5 |
| 35°   | 1996.1 | 1996.1 | 2003.8 | 1992.3 | 2007.8 | 2007.8 | 2038.8 | 2019.3 | 2015.5 | 2003.8 | 2015.5 |
| 37.5° | 1903.1 | 1891.5 | 1895.3 | 1895.3 | 1903.1 | 1910.8 | 1926.3 | 1918.6 | 1918.6 | 1907.0 | 1914.8 |
| 40°   | 1779.1 | 1771.3 | 1782.9 | 1782.9 | 1794.6 | 1794.6 | 1810.1 | 1802.3 | 1813.9 | 1813.9 | 1813.9 |
| 42.5° | 1670.6 | 1670.6 | 1662.9 | 1674.4 | 1678.4 | 1674.4 | 1701.6 | 1697.7 | 1701.6 | 1693.9 | 1697.7 |
| 45°   | 1554.2 | 1554.2 | 1546.5 | 1542.7 | 1562.0 | 1558.2 | 1589.2 | 1577.5 | 1593.0 | 1585.2 | 1589.2 |
| 47.5° | 1395.3 | 1414.7 | 1403.0 | 1414.7 | 1438.0 | 1441.9 | 1461.2 | 1453.5 | 1469.0 | 1457.4 | 1472.9 |
| 50°   | 1244.3 | 1244.3 | 1255.8 | 1271.3 | 1294.5 | 1298.5 | 1321.7 | 1337.2 | 1345.0 | 1348.8 | 1352.7 |
| 52.5° | 1085.3 | 1081.4 | 1093.1 | 1112.4 | 1131.8 | 1147.3 | 1170.6 | 1193.8 | 1209.3 | 1232.6 | 1220.9 |
| 55°   | 899.2  | 906.9  | 918.6  | 941.9  | 972.9  | 992.2  | 1011.6 | 1042.6 | 1069.8 | 1081.4 | 1104.6 |
| 57.5° | 740.3  | 732.5  | 740.3  | 771.3  | 806.2  | 821.7  | 848.9  | 879.9  | 918.6  | 941.9  | 949.6  |
| 60°   | 573.6  | 577.5  | 585.3  | 612.5  | 639.5  | 662.8  | 674.5  | 724.8  | 759.7  | 783.0  | 798.5  |
| 62.5° | 422.6  | 430.3  | 438.1  | 461.3  | 488.3  | 507.8  | 527.1  | 569.8  | 600.8  | 624.0  | 639.5  |
| 65°   | 294.6  | 298.4  | 310.1  | 321.7  | 348.9  | 368.2  | 383.7  | 418.6  | 449.6  | 469.0  | 480.6  |
| 67.5° | 182.2  | 186.0  | 193.7  | 209.4  | 228.7  | 244.2  | 259.7  | 282.9  | 310.1  | 329.4  | 333.4  |
| 70°   | 93.0   | 96.9   | 100.7  | 112.4  | 127.9  | 135.7  | 147.2  | 166.7  | 186.0  | 201.5  | 209.4  |
| 72.5° | 31.0   | 31.0   | 34.9   | 42.7   | 50.4   | 58.2   | 62.0   | 81.4   | 96.9   | 104.7  | 108.5  |
| 75°   | 7.7    | 7.7    | 7.7    | 7.7    | 7.7    | 11.7   | 11.7   | 23.2   | 31.0   | 38.7   | 42.7   |
| 77.5° | 4.0    | 4.0    | 4.0    | 4.0    | 4.0    | 4.0    | 4.0    | 4.0    | 4.0    | 7.7    | 7.7    |
| 80°   | 4.0    | 4.0    | 4.0    | 4.0    | 4.0    | 4.0    | 4.0    | 4.0    | 4.0    | 4.0    | 4.0    |
| 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):**

|       | 50°    | 55°    | 60°    | 65°    | 67.5°  | 70°    | 75°    | 80°    | 85°    | 90°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 2728.7 | 2728.7 | 2728.7 | 2728.7 | 2728.7 | 2728.7 | 2728.7 | 2728.7 | 2728.7 | 2728.7 |
| 2.5°  | 2728.7 | 2721.0 | 2717.0 | 2721.0 | 2721.0 | 2717.0 | 2728.7 | 2744.2 | 2763.5 | 2713.2 |
| 5°    | 2724.8 | 2717.0 | 2724.8 | 2701.5 | 2713.2 | 2705.5 | 2721.0 | 2717.0 | 2732.5 | 2717.0 |
| 7.5°  | 2713.2 | 2697.7 | 2701.5 | 2690.0 | 2705.5 | 2686.0 | 2697.7 | 2721.0 | 2705.5 | 2682.2 |
| 10°   | 2674.5 | 2666.7 | 2693.8 | 2655.0 | 2647.3 | 2662.8 | 2693.8 | 2670.5 | 2662.8 | 2670.5 |
| 12.5° | 2635.6 | 2635.6 | 2647.3 | 2616.3 | 2620.1 | 2627.8 | 2643.3 | 2627.8 | 2635.6 | 2655.0 |
| 15°   | 2593.1 | 2585.3 | 2604.6 | 2581.4 | 2577.6 | 2569.8 | 2585.3 | 2585.3 | 2593.1 | 2581.4 |
| 17.5° | 2542.6 | 2531.1 | 2531.1 | 2523.3 | 2519.4 | 2538.8 | 2546.6 | 2550.4 | 2554.3 | 2538.8 |
| 20°   | 2480.6 | 2476.8 | 2488.4 | 2476.8 | 2480.6 | 2484.6 | 2484.6 | 2476.8 | 2511.6 | 2469.1 |
| 22.5° | 2414.7 | 2426.4 | 2410.9 | 2403.1 | 2410.9 | 2418.6 | 2418.6 | 2422.4 | 2414.7 | 2406.9 |
| 25°   | 2348.9 | 2356.6 | 2360.4 | 2337.2 | 2348.9 | 2337.2 | 2364.4 | 2368.2 | 2352.7 | 2360.4 |
| 27.5° | 2290.7 | 2279.1 | 2275.2 | 2259.7 | 2267.4 | 2263.6 | 2267.4 | 2267.4 | 2290.7 | 2259.7 |
| 30°   | 2201.5 | 2189.9 | 2193.7 | 2182.2 | 2186.0 | 2182.2 | 2186.0 | 2186.0 | 2201.5 | 2197.7 |
| 32.5° | 2116.3 | 2104.7 | 2108.5 | 2097.0 | 2097.0 | 2100.8 | 2093.0 | 2093.0 | 2104.7 | 2097.0 |
| 35°   | 2034.8 | 2007.8 | 2011.6 | 2007.8 | 2011.6 | 1996.1 | 1996.1 | 1992.3 | 2000.0 | 1980.6 |
| 37.5° | 1918.6 | 1907.0 | 1903.1 | 1899.3 | 1903.1 | 1895.3 | 1903.1 | 1891.5 | 1903.1 | 1887.6 |
| 40°   | 1813.9 | 1806.1 | 1810.1 | 1786.8 | 1786.8 | 1790.6 | 1782.9 | 1779.1 | 1782.9 | 1798.4 |
| 42.5° | 1709.4 | 1693.9 | 1686.1 | 1678.4 | 1682.2 | 1670.6 | 1666.7 | 1658.9 | 1666.7 | 1651.2 |
| 45°   | 1585.2 | 1585.2 | 1581.4 | 1562.0 | 1565.9 | 1565.9 | 1550.4 | 1534.9 | 1538.7 | 1538.7 |
| 47.5° | 1472.9 | 1465.2 | 1461.2 | 1441.9 | 1438.0 | 1434.2 | 1418.5 | 1407.0 | 1407.0 | 1395.3 |
| 50°   | 1348.8 | 1341.0 | 1329.5 | 1310.0 | 1302.3 | 1279.1 | 1267.5 | 1252.0 | 1236.5 | 1236.5 |
| 52.5° | 1232.6 | 1205.4 | 1189.9 | 1158.9 | 1147.3 | 1135.6 | 1104.6 | 1093.1 | 1081.4 | 1069.8 |
| 55°   | 1093.1 | 1069.8 | 1038.8 | 1003.9 | 988.4  | 968.9  | 937.9  | 914.7  | 899.2  | 903.1  |
| 57.5° | 957.4  | 918.6  | 887.6  | 841.2  | 821.7  | 810.0  | 779.0  | 748.0  | 732.5  | 732.5  |
| 60°   | 790.7  | 759.7  | 721.0  | 678.3  | 662.8  | 643.5  | 604.6  | 585.3  | 573.6  | 562.0  |
| 62.5° | 631.8  | 608.5  | 573.6  | 519.3  | 507.8  | 488.3  | 461.3  | 438.1  | 426.4  | 426.4  |
| 65°   | 472.8  | 449.6  | 418.6  | 379.9  | 364.4  | 348.9  | 325.6  | 302.4  | 290.7  | 286.9  |
| 67.5° | 333.4  | 306.2  | 279.1  | 248.1  | 236.4  | 228.7  | 205.4  | 189.9  | 182.2  | 178.2  |
| 70°   | 201.5  | 186.0  | 166.7  | 143.4  | 131.7  | 124.0  | 108.5  | 96.9   | 93.0   | 89.2   |
| 72.5° | 104.7  | 93.0   | 77.5   | 62.0   | 54.2   | 46.5   | 38.7   | 31.0   | 27.2   | 27.2   |
| 75°   | 38.7   | 31.0   | 19.4   | 11.7   | 7.7    | 7.7    | 7.7    | 7.7    | 7.7    | 7.7    |
| 77.5° | 7.7    | 4.0    | 4.0    | 4.0    | 4.0    | 4.0    | 4.0    | 4.0    | 4.0    | 4.0    |
| 80°   | 4.0    | 4.0    | 4.0    | 4.0    | 4.0    | 4.0    | 4.0    | 4.0    | 4.0    | 4.0    |
| 82.5° | 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    |
| 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    |



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









(END OF REPORT)