

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: P209501

Luminaire Tested: **LDSQ6B70D010 EU6B60709027 6LBCSSQ1MMS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P209501  
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: LDSQ6B70D010 EU6B60709027 6LBCSSQ1MMS  
Description: PORTFOLIO LD6 SERIES 6" RECESSED FIXTURE WITH A SQUARE SHALLOW CAST METALLIC SILVER TRIM  
MEDIUM DISTRIBUTION WITH MATTE METALLIC SILVER TRIM  
D010TE  
Light Source: HIGH LUMEN LED 2700 K  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6363.7 lumens  
Efficiency: N/A  
Efficacy: 80.1 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

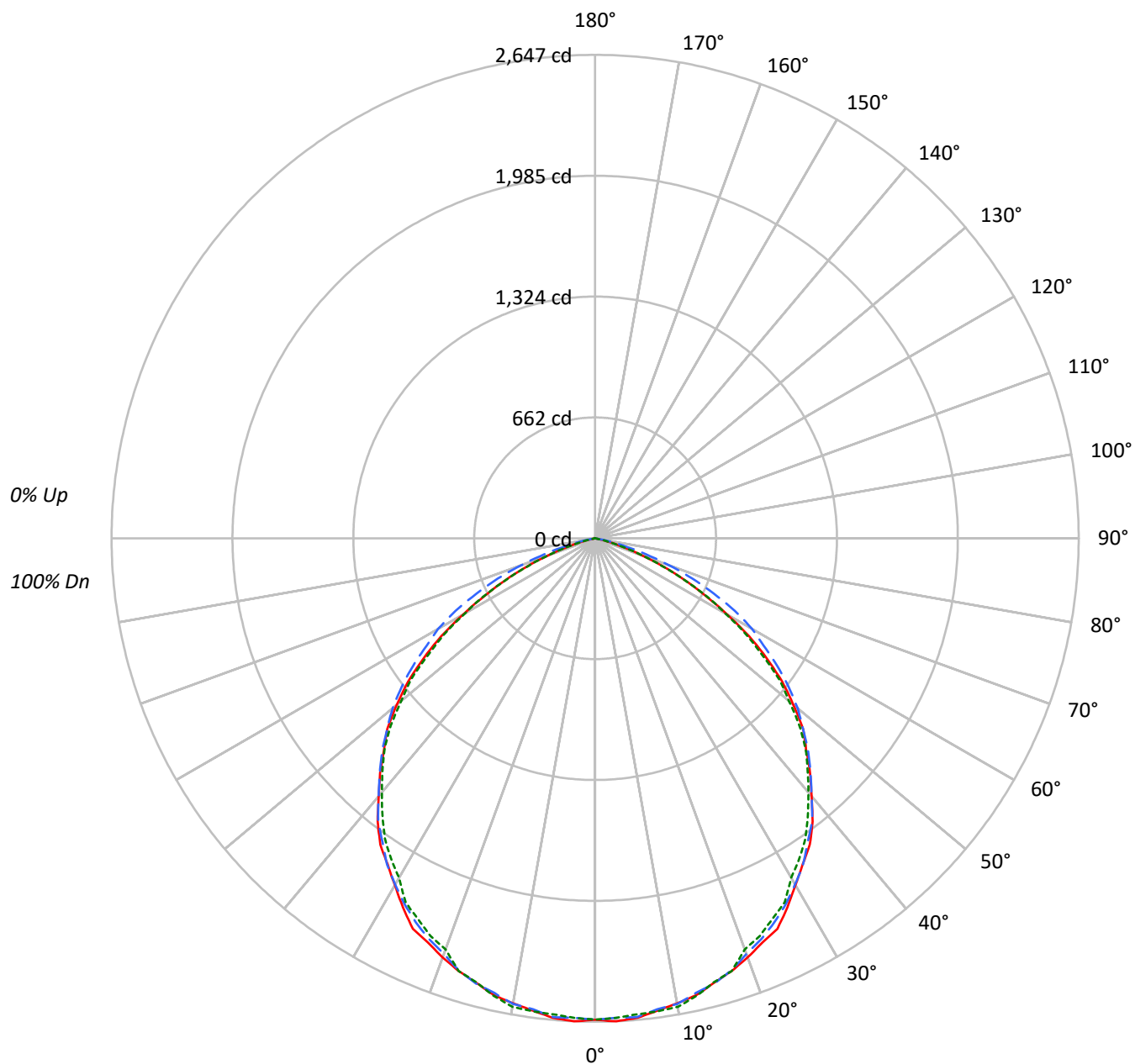
Input Watts (W): 79.45  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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

**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°    | 249.3  | 3.9       |
| 10°-20°   | 710.9  | 11.2      |
| 20°-30°   | 1069.7 | 16.8      |
| 30°-40°   | 1265.4 | 19.9      |
| 40°-50°   | 1262.8 | 19.8      |
| 50°-60°   | 1047.1 | 16.5      |
| 60°-70°   | 611.8  | 9.6       |
| 70°-80°   | 145.7  | 2.3       |
| 80°-90°   | 1.1    | 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°    | 2029.8 | 31.9      |
| 0°-40°    | 3295.2 | 51.8      |
| 0°-60°    | 5605.1 | 88.1      |
| 0°-90°    | 6363.7 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 6363.7 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 2636 | 2636  | 2636 | 2636  | 2636 |      |
| 5°  | 2636 | 2622  | 2632 | 2624  | 2616 | 250  |
| 15° | 2519 | 2517  | 2523 | 2511  | 2515 | 712  |
| 25° | 2360 | 2333  | 2321 | 2313  | 2298 | 1079 |
| 35° | 2049 | 2029  | 2029 | 2018  | 2006 | 1274 |
| 45° | 1633 | 1635  | 1648 | 1631  | 1629 | 1263 |
| 55° | 1147 | 1188  | 1217 | 1184  | 1120 | 1018 |
| 65° | 540  | 608   | 715  | 606   | 536  | 537  |
| 75° | 78   | 113   | 175  | 111   | 74   | 105  |
| 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°    | 25°    | 30°    | 35°    | 40°    | 45°    | 50°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 2635.8 | 2635.8 | 2635.8 | 2635.8 | 2635.8 | 2635.8 | 2635.8 | 2635.8 | 2635.8 | 2635.8 | 2635.8 |
| 2.5°  | 2647.4 | 2631.9 | 2643.6 | 2620.2 | 2635.8 | 2620.2 | 2624.1 | 2616.3 | 2631.9 | 2628.0 | 2624.1 |
| 5°    | 2635.8 | 2639.7 | 2631.9 | 2639.7 | 2628.0 | 2616.3 | 2628.0 | 2620.2 | 2596.9 | 2631.9 | 2624.1 |
| 7.5°  | 2608.6 | 2612.5 | 2604.7 | 2616.3 | 2608.6 | 2593.0 | 2624.1 | 2600.8 | 2596.9 | 2600.8 | 2616.3 |
| 10°   | 2585.2 | 2593.0 | 2589.1 | 2585.2 | 2589.1 | 2589.1 | 2581.4 | 2569.7 | 2581.4 | 2589.1 | 2585.2 |
| 12.5° | 2561.9 | 2573.6 | 2565.8 | 2558.0 | 2550.3 | 2554.1 | 2561.9 | 2542.5 | 2542.5 | 2550.3 | 2573.6 |
| 15°   | 2519.1 | 2526.9 | 2530.8 | 2515.3 | 2515.3 | 2519.1 | 2534.7 | 2503.6 | 2519.1 | 2523.0 | 2526.9 |
| 17.5° | 2484.2 | 2488.0 | 2488.0 | 2476.4 | 2484.2 | 2472.5 | 2484.2 | 2468.6 | 2484.2 | 2480.3 | 2488.0 |
| 20°   | 2441.4 | 2449.2 | 2441.4 | 2441.4 | 2433.6 | 2437.5 | 2437.5 | 2437.5 | 2425.8 | 2422.0 | 2429.7 |
| 22.5° | 2394.7 | 2394.7 | 2387.0 | 2394.7 | 2387.0 | 2383.1 | 2402.5 | 2371.4 | 2402.5 | 2375.3 | 2398.6 |
| 25°   | 2359.8 | 2340.3 | 2328.7 | 2324.8 | 2340.3 | 2324.8 | 2332.5 | 2320.9 | 2328.7 | 2320.9 | 2324.8 |
| 27.5° | 2278.1 | 2266.5 | 2262.6 | 2266.5 | 2266.5 | 2262.6 | 2278.1 | 2235.4 | 2262.6 | 2258.7 | 2258.7 |
| 30°   | 2192.6 | 2192.6 | 2200.4 | 2192.6 | 2200.4 | 2188.7 | 2204.3 | 2169.3 | 2192.6 | 2188.7 | 2192.6 |
| 32.5° | 2114.8 | 2118.7 | 2118.7 | 2126.5 | 2114.8 | 2118.7 | 2118.7 | 2107.1 | 2114.8 | 2118.7 | 2111.0 |
| 35°   | 2048.8 | 2029.3 | 2029.3 | 2029.3 | 2029.3 | 2029.3 | 2037.1 | 2025.4 | 2037.1 | 2029.3 | 2029.3 |
| 37.5° | 1955.5 | 1936.0 | 1936.0 | 1932.1 | 1951.6 | 1939.9 | 1959.3 | 1943.8 | 1943.8 | 1951.6 | 1951.6 |
| 40°   | 1842.7 | 1850.5 | 1838.8 | 1854.4 | 1850.5 | 1834.9 | 1869.9 | 1846.6 | 1862.1 | 1842.7 | 1858.3 |
| 42.5° | 1741.6 | 1745.5 | 1741.6 | 1737.7 | 1753.3 | 1749.4 | 1765.0 | 1749.4 | 1745.5 | 1745.5 | 1772.7 |
| 45°   | 1632.8 | 1632.8 | 1632.8 | 1644.4 | 1632.8 | 1636.7 | 1652.2 | 1644.4 | 1652.2 | 1648.3 | 1675.5 |
| 47.5° | 1543.4 | 1523.9 | 1520.0 | 1543.4 | 1539.5 | 1543.4 | 1543.4 | 1547.3 | 1551.1 | 1543.4 | 1555.0 |
| 50°   | 1415.1 | 1407.3 | 1407.3 | 1411.2 | 1415.1 | 1422.9 | 1434.5 | 1442.3 | 1434.5 | 1446.2 | 1450.1 |
| 52.5° | 1290.7 | 1282.9 | 1286.8 | 1302.3 | 1310.1 | 1306.2 | 1325.7 | 1329.6 | 1325.7 | 1333.4 | 1333.4 |
| 55°   | 1146.8 | 1139.1 | 1150.7 | 1170.2 | 1181.8 | 1193.5 | 1212.9 | 1197.4 | 1212.9 | 1216.8 | 1220.7 |
| 57.5° | 999.1  | 995.2  | 999.1  | 1018.5 | 1030.2 | 1057.4 | 1088.5 | 1088.5 | 1104.1 | 1092.4 | 1104.1 |
| 60°   | 835.8  | 835.8  | 851.4  | 863.0  | 894.1  | 913.6  | 944.7  | 960.2  | 975.8  | 991.3  | 983.6  |
| 62.5° | 680.3  | 684.2  | 695.9  | 723.1  | 742.5  | 769.7  | 804.7  | 820.3  | 847.5  | 863.0  | 855.3  |
| 65°   | 540.4  | 540.4  | 548.1  | 571.5  | 590.9  | 625.9  | 657.0  | 692.0  | 707.5  | 715.3  | 719.2  |
| 67.5° | 404.3  | 400.4  | 416.0  | 431.5  | 451.0  | 485.9  | 520.9  | 540.4  | 567.6  | 575.4  | 571.5  |
| 70°   | 272.1  | 276.0  | 283.8  | 299.3  | 322.7  | 349.9  | 388.8  | 404.3  | 419.9  | 427.6  | 419.9  |
| 72.5° | 171.1  | 171.1  | 174.9  | 190.5  | 206.0  | 225.5  | 252.7  | 268.2  | 287.7  | 291.6  | 283.8  |
| 75°   | 77.8   | 77.8   | 85.5   | 93.3   | 105.0  | 120.5  | 140.0  | 151.6  | 163.3  | 174.9  | 174.9  |
| 77.5° | 15.6   | 19.4   | 23.3   | 23.3   | 31.1   | 42.8   | 54.4   | 66.1   | 77.8   | 77.8   | 77.8   |
| 80°   | 3.9    | 3.9    | 3.9    | 3.9    | 3.9    | 3.9    | 7.8    | 11.7   | 19.4   | 19.4   | 19.4   |
| 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°    | 2635.8 | 2635.8 | 2635.8 | 2635.8 | 2635.8 | 2635.8 | 2635.8 | 2635.8 |
| 2.5°  | 2635.8 | 2659.1 | 2635.8 | 2624.1 | 2639.7 | 2635.8 | 2624.1 | 2628.0 |
| 5°    | 2624.1 | 2631.9 | 2639.7 | 2608.6 | 2628.0 | 2631.9 | 2624.1 | 2616.3 |
| 7.5°  | 2612.5 | 2616.3 | 2612.5 | 2604.7 | 2604.7 | 2604.7 | 2612.5 | 2612.5 |
| 10°   | 2608.6 | 2596.9 | 2577.5 | 2565.8 | 2577.5 | 2577.5 | 2573.6 | 2604.7 |
| 12.5° | 2558.0 | 2573.6 | 2561.9 | 2538.6 | 2561.9 | 2558.0 | 2558.0 | 2565.8 |
| 15°   | 2519.1 | 2519.1 | 2526.9 | 2495.8 | 2511.4 | 2507.5 | 2507.5 | 2515.3 |
| 17.5° | 2480.3 | 2480.3 | 2476.4 | 2468.6 | 2464.7 | 2476.4 | 2464.7 | 2484.2 |
| 20°   | 2425.8 | 2433.6 | 2456.9 | 2418.1 | 2429.7 | 2418.1 | 2418.1 | 2394.7 |
| 22.5° | 2359.8 | 2398.6 | 2379.2 | 2375.3 | 2371.4 | 2375.3 | 2383.1 | 2355.9 |
| 25°   | 2317.0 | 2317.0 | 2324.8 | 2301.4 | 2301.4 | 2309.2 | 2305.3 | 2297.6 |
| 27.5° | 2258.7 | 2254.8 | 2250.9 | 2243.1 | 2262.6 | 2247.0 | 2247.0 | 2247.0 |
| 30°   | 2177.0 | 2188.7 | 2184.8 | 2165.4 | 2188.7 | 2180.9 | 2169.3 | 2145.9 |
| 32.5° | 2107.1 | 2122.6 | 2099.3 | 2095.4 | 2091.5 | 2095.4 | 2099.3 | 2079.9 |
| 35°   | 2021.5 | 2025.4 | 2025.4 | 2009.9 | 2013.8 | 2009.9 | 2002.1 | 2006.0 |
| 37.5° | 1943.8 | 1939.9 | 1920.5 | 1912.7 | 1916.6 | 1916.6 | 1920.5 | 1912.7 |
| 40°   | 1834.9 | 1846.6 | 1846.6 | 1819.4 | 1827.2 | 1819.4 | 1819.4 | 1815.5 |
| 42.5° | 1745.5 | 1749.4 | 1737.7 | 1726.1 | 1726.1 | 1722.2 | 1714.4 | 1722.2 |
| 45°   | 1652.2 | 1648.3 | 1636.7 | 1625.0 | 1625.0 | 1621.1 | 1613.3 | 1628.9 |
| 47.5° | 1547.3 | 1539.5 | 1535.6 | 1520.0 | 1520.0 | 1496.7 | 1500.6 | 1516.2 |
| 50°   | 1442.3 | 1434.5 | 1419.0 | 1411.2 | 1399.5 | 1387.9 | 1384.0 | 1384.0 |
| 52.5° | 1317.9 | 1317.9 | 1302.3 | 1286.8 | 1282.9 | 1275.1 | 1267.4 | 1271.2 |
| 55°   | 1209.0 | 1209.0 | 1197.4 | 1170.2 | 1154.6 | 1135.2 | 1123.5 | 1119.6 |
| 57.5° | 1084.6 | 1076.9 | 1053.5 | 1022.4 | 1006.9 | 991.3  | 979.7  | 979.7  |
| 60°   | 960.2  | 940.8  | 917.5  | 890.3  | 863.0  | 835.8  | 828.1  | 824.2  |
| 62.5° | 824.2  | 804.7  | 762.0  | 730.9  | 711.4  | 695.9  | 680.3  | 692.0  |
| 65°   | 688.1  | 660.9  | 622.0  | 590.9  | 571.5  | 548.1  | 536.5  | 536.5  |
| 67.5° | 544.3  | 517.0  | 478.2  | 447.1  | 427.6  | 412.1  | 396.5  | 396.5  |
| 70°   | 400.4  | 381.0  | 346.0  | 318.8  | 303.2  | 279.9  | 276.0  | 276.0  |
| 72.5° | 272.1  | 248.8  | 221.6  | 202.2  | 186.6  | 171.1  | 163.3  | 159.4  |
| 75°   | 151.6  | 136.1  | 116.6  | 105.0  | 89.4   | 81.6   | 73.9   | 73.9   |
| 77.5° | 62.2   | 50.5   | 38.9   | 31.1   | 23.3   | 19.4   | 15.6   | 19.4   |
| 80°   | 11.7   | 7.8    | 3.9    | 3.9    | 3.9    | 3.9    | 3.9    | 3.9    |
| 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    |



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









(END OF REPORT)