

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: P209338

Luminaire Tested: **LDSQ6B20D010 EU6B10209040 6LBSQ1LI**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P209338  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P35360)  
Test Lab: INNOVATION CENTER-P3  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LDSQ6B20D010 EU6B10209040 6LBSQ1LI  
Description: PORTFOLIO LD6 SERIES 6" RECESSED FIXTURE WITH A SQUARE LOW  
IRIDESCENT TRIM.  
MEDIUM DISTRIBUTION WITH SPECULAR CLEAR 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 4000 K  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1752.3 lumens  
Efficiency: N/A  
Efficacy: 84.2 lumens/watt  
Spacing Criteria (0/90/45): 0.92 / 0.92 / 0.95  
Luminous Opening: Point Source (0' x 0' x 0')  
CIE Type: Direct

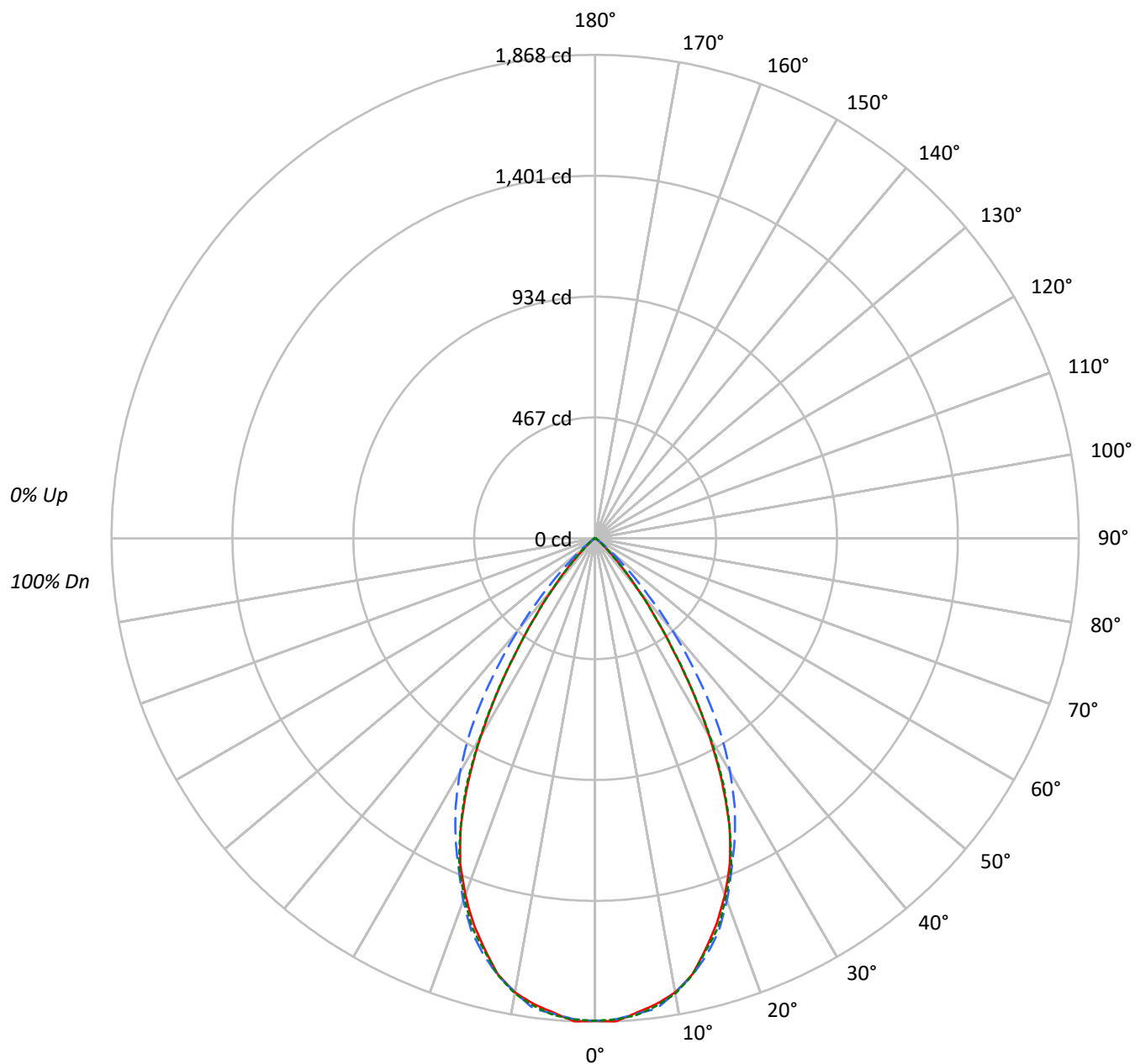
Input Watts (W): 20.8  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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   | 113 | 111 | 108 | 106 | 111 | 108 | 106 | 104 | 104 | 103 | 101 | 101 | 99  | 98  | 97  | 96  | 95  | 93  |    |    |   |  |  |  |
| 2   | 108 | 103 | 99  | 95  | 106 | 101 | 97  | 94  | 98  | 95  | 92  | 95  | 92  | 90  | 92  | 90  | 88  | 87  |    |    |   |  |  |  |
| 3   | 102 | 96  | 91  | 87  | 100 | 94  | 90  | 86  | 92  | 88  | 85  | 89  | 86  | 83  | 87  | 84  | 82  | 80  |    |    |   |  |  |  |
| 4   | 97  | 89  | 84  | 79  | 95  | 88  | 83  | 79  | 86  | 81  | 78  | 84  | 80  | 77  | 82  | 79  | 76  | 75  |    |    |   |  |  |  |
| 5   | 92  | 83  | 78  | 73  | 90  | 82  | 77  | 73  | 81  | 76  | 72  | 79  | 75  | 72  | 77  | 74  | 71  | 69  |    |    |   |  |  |  |
| 6   | 87  | 78  | 72  | 68  | 86  | 77  | 72  | 67  | 76  | 71  | 67  | 74  | 70  | 67  | 73  | 69  | 66  | 65  |    |    |   |  |  |  |
| 7   | 83  | 73  | 67  | 63  | 81  | 73  | 67  | 63  | 71  | 66  | 62  | 70  | 66  | 62  | 69  | 65  | 62  | 60  |    |    |   |  |  |  |
| 8   | 79  | 69  | 63  | 59  | 77  | 68  | 63  | 59  | 67  | 62  | 58  | 66  | 62  | 58  | 65  | 61  | 58  | 56  |    |    |   |  |  |  |
| 9   | 75  | 65  | 59  | 55  | 74  | 64  | 59  | 55  | 64  | 58  | 55  | 63  | 58  | 54  | 62  | 57  | 54  | 53  |    |    |   |  |  |  |
| 10  | 71  | 61  | 55  | 52  | 70  | 61  | 55  | 51  | 60  | 55  | 51  | 59  | 55  | 51  | 59  | 54  | 51  | 50  |    |    |   |  |  |  |

**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°    | 174.6  | 10.0      |
| 10°-20°   | 464.4  | 26.5      |
| 20°-30°   | 569.9  | 32.5      |
| 30°-40°   | 393.4  | 22.5      |
| 40°-50°   | 123.0  | 7.0       |
| 50°-60°   | 19.2   | 1.1       |
| 60°-70°   | 5.5    | 0.3       |
| 70°-80°   | 1.8    | 0.1       |
| 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°    | 1208.9 | 69.0      |
| 0°-40°    | 1602.3 | 91.4      |
| 0°-60°    | 1744.5 | 99.6      |
| 0°-90°    | 1752.3 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 1752.3 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1865 | 1865  | 1865 | 1865  | 1865 |      |
| 5°  | 1840 | 1847  | 1845 | 1845  | 1849 | 174  |
| 15° | 1645 | 1668  | 1666 | 1664  | 1651 | 460  |
| 25° | 1228 | 1260  | 1276 | 1268  | 1229 | 550  |
| 35° | 518  | 613   | 760  | 619   | 520  | 331  |
| 45° | 98   | 133   | 214  | 132   | 100  | 87   |
| 55° | 16   | 18    | 20   | 18    | 15   | 16   |
| 65° | 5    | 6     | 5    | 6     | 5    | 5    |
| 75° | 1    | 1     | 1    | 1     | 1    | 2    |
| 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°    | 1864.7 | 1864.7 | 1864.7 | 1864.7 | 1864.7 | 1864.7 | 1864.7 | 1864.7 | 1864.7 | 1864.7 | 1864.7 |
| 2.5°  | 1868.2 | 1842.4 | 1858.8 | 1855.3 | 1864.7 | 1870.6 | 1864.7 | 1875.3 | 1868.2 | 1860.0 | 1862.3 |
| 5°    | 1840.0 | 1843.5 | 1842.4 | 1844.7 | 1847.1 | 1847.1 | 1858.8 | 1860.0 | 1862.3 | 1844.7 | 1849.4 |
| 7.5°  | 1815.3 | 1815.3 | 1821.2 | 1818.9 | 1827.1 | 1824.7 | 1825.9 | 1835.3 | 1836.5 | 1831.8 | 1828.3 |
| 10°   | 1781.3 | 1776.6 | 1770.7 | 1770.7 | 1781.3 | 1782.4 | 1791.8 | 1793.0 | 1800.1 | 1781.3 | 1783.6 |
| 12.5° | 1728.4 | 1726.0 | 1716.6 | 1721.3 | 1729.6 | 1724.9 | 1740.1 | 1741.3 | 1739.0 | 1730.7 | 1735.4 |
| 15°   | 1645.0 | 1654.4 | 1652.0 | 1650.8 | 1669.6 | 1667.3 | 1666.1 | 1669.6 | 1670.8 | 1666.1 | 1662.6 |
| 17.5° | 1561.5 | 1569.8 | 1570.9 | 1573.3 | 1576.8 | 1580.3 | 1585.0 | 1598.0 | 1593.3 | 1589.7 | 1601.5 |
| 20°   | 1465.2 | 1461.7 | 1471.1 | 1480.5 | 1484.0 | 1484.0 | 1491.0 | 1500.4 | 1493.4 | 1488.7 | 1489.9 |
| 22.5° | 1360.6 | 1366.5 | 1361.8 | 1371.2 | 1375.9 | 1381.8 | 1388.8 | 1397.0 | 1391.2 | 1378.2 | 1393.5 |
| 25°   | 1227.8 | 1231.4 | 1246.6 | 1245.5 | 1252.5 | 1266.6 | 1277.2 | 1277.2 | 1277.2 | 1276.0 | 1276.0 |
| 27.5° | 1061.0 | 1058.7 | 1077.5 | 1090.4 | 1108.0 | 1130.3 | 1144.4 | 1166.7 | 1170.3 | 1166.7 | 1158.5 |
| 30°   | 882.4  | 880.1  | 903.6  | 920.0  | 951.7  | 962.3  | 1001.1 | 1022.2 | 1044.6 | 1043.4 | 1037.5 |
| 32.5° | 696.8  | 701.5  | 720.3  | 743.8  | 769.6  | 802.5  | 838.9  | 885.9  | 905.9  | 910.6  | 900.0  |
| 35°   | 518.2  | 525.2  | 542.8  | 562.8  | 594.5  | 631.0  | 681.5  | 726.1  | 760.2  | 760.2  | 752.0  |
| 37.5° | 373.6  | 376.0  | 392.4  | 405.4  | 438.3  | 471.2  | 514.6  | 575.7  | 596.9  | 605.1  | 596.9  |
| 40°   | 255.0  | 255.0  | 264.4  | 278.5  | 305.5  | 333.7  | 373.6  | 419.5  | 450.0  | 462.9  | 448.8  |
| 42.5° | 162.1  | 164.5  | 171.5  | 180.9  | 200.9  | 225.6  | 256.1  | 290.2  | 312.5  | 321.9  | 309.0  |
| 45°   | 97.5   | 99.9   | 105.7  | 112.8  | 125.7  | 141.0  | 162.1  | 186.8  | 205.6  | 213.8  | 208.0  |
| 47.5° | 58.7   | 61.1   | 63.4   | 68.1   | 77.5   | 88.1   | 98.7   | 112.8  | 124.5  | 125.7  | 123.4  |
| 50°   | 34.1   | 34.1   | 36.4   | 39.9   | 44.6   | 50.5   | 56.4   | 64.6   | 68.1   | 72.8   | 68.1   |
| 52.5° | 22.3   | 22.3   | 22.3   | 23.5   | 25.8   | 28.2   | 30.5   | 35.2   | 37.6   | 37.6   | 36.4   |
| 55°   | 16.4   | 16.4   | 16.4   | 16.4   | 17.6   | 17.6   | 17.6   | 18.8   | 20.0   | 20.0   | 20.0   |
| 57.5° | 11.7   | 11.7   | 11.7   | 12.9   | 12.9   | 12.9   | 11.7   | 11.7   | 11.7   | 11.7   | 11.7   |
| 60°   | 9.4    | 9.4    | 9.4    | 9.4    | 9.4    | 9.4    | 9.4    | 9.4    | 8.2    | 8.2    | 8.2    |
| 62.5° | 7.0    | 7.0    | 7.0    | 7.0    | 7.0    | 7.0    | 7.0    | 7.0    | 7.0    | 7.0    | 7.0    |
| 65°   | 4.7    | 4.7    | 4.7    | 5.9    | 5.9    | 5.9    | 5.9    | 4.7    | 4.7    | 4.7    | 4.7    |
| 67.5° | 3.5    | 3.5    | 3.5    | 4.7    | 4.7    | 4.7    | 4.7    | 4.7    | 3.5    | 3.5    | 3.5    |
| 70°   | 2.3    | 2.3    | 3.5    | 3.5    | 3.5    | 3.5    | 3.5    | 3.5    | 3.5    | 3.5    | 3.5    |
| 72.5° | 2.3    | 2.3    | 2.3    | 2.3    | 2.3    | 2.3    | 2.3    | 2.3    | 2.3    | 2.3    | 2.3    |
| 75°   | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    |
| 77.5° | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    |
| 80°   | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    |
| 82.5° | 0.0    | 0.0    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    |
| 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°    | 1864.7 | 1864.7 | 1864.7 | 1864.7 | 1864.7 | 1864.7 | 1864.7 | 1864.7 |
| 2.5°  | 1869.4 | 1863.5 | 1863.5 | 1863.5 | 1861.2 | 1863.5 | 1867.0 | 1861.2 |
| 5°    | 1849.4 | 1851.8 | 1841.2 | 1849.4 | 1852.9 | 1847.1 | 1861.2 | 1849.4 |
| 7.5°  | 1831.8 | 1828.3 | 1811.8 | 1823.6 | 1830.6 | 1833.0 | 1831.8 | 1822.4 |
| 10°   | 1796.5 | 1788.3 | 1781.3 | 1781.3 | 1778.9 | 1777.7 | 1790.7 | 1786.0 |
| 12.5° | 1733.1 | 1739.0 | 1728.4 | 1734.3 | 1729.6 | 1730.7 | 1731.9 | 1729.6 |
| 15°   | 1679.0 | 1673.2 | 1659.1 | 1668.5 | 1662.6 | 1656.7 | 1668.5 | 1650.8 |
| 17.5° | 1594.4 | 1593.3 | 1585.0 | 1579.2 | 1581.5 | 1580.3 | 1586.2 | 1578.0 |
| 20°   | 1494.6 | 1496.9 | 1492.2 | 1489.9 | 1486.3 | 1478.1 | 1485.2 | 1475.8 |
| 22.5° | 1386.5 | 1388.8 | 1393.5 | 1384.1 | 1385.3 | 1373.5 | 1384.1 | 1373.5 |
| 25°   | 1277.2 | 1276.0 | 1270.1 | 1265.4 | 1252.5 | 1239.6 | 1237.2 | 1229.0 |
| 27.5° | 1157.3 | 1149.1 | 1135.0 | 1119.7 | 1099.8 | 1082.2 | 1081.0 | 1075.1 |
| 30°   | 1025.8 | 1008.1 | 982.3  | 957.6  | 927.1  | 900.0  | 900.0  | 890.6  |
| 32.5° | 887.1  | 847.2  | 811.9  | 781.4  | 741.4  | 726.1  | 710.9  | 702.6  |
| 35°   | 721.4  | 686.2  | 643.9  | 593.4  | 574.6  | 537.0  | 539.3  | 520.5  |
| 37.5° | 565.2  | 521.7  | 481.7  | 440.6  | 407.7  | 390.1  | 380.7  | 371.3  |
| 40°   | 419.5  | 377.2  | 333.7  | 306.7  | 277.3  | 262.0  | 256.1  | 253.8  |
| 42.5° | 286.7  | 251.4  | 223.2  | 200.9  | 185.6  | 169.2  | 164.5  | 162.1  |
| 45°   | 186.8  | 166.8  | 141.0  | 123.4  | 112.8  | 103.4  | 103.4  | 99.9   |
| 47.5° | 111.6  | 98.7   | 85.8   | 74.0   | 67.0   | 61.1   | 58.7   | 57.6   |
| 50°   | 62.3   | 55.2   | 48.2   | 43.5   | 38.8   | 35.2   | 34.1   | 34.1   |
| 52.5° | 34.1   | 30.5   | 28.2   | 24.7   | 22.3   | 22.3   | 22.3   | 21.1   |
| 55°   | 17.6   | 17.6   | 17.6   | 17.6   | 16.4   | 16.4   | 16.4   | 15.3   |
| 57.5° | 11.7   | 11.7   | 12.9   | 12.9   | 12.9   | 11.7   | 11.7   | 11.7   |
| 60°   | 9.4    | 9.4    | 9.4    | 9.4    | 9.4    | 9.4    | 9.4    | 9.4    |
| 62.5° | 7.0    | 7.0    | 7.0    | 7.0    | 7.0    | 7.0    | 7.0    | 7.0    |
| 65°   | 4.7    | 5.9    | 5.9    | 5.9    | 5.9    | 4.7    | 4.7    | 4.7    |
| 67.5° | 3.5    | 4.7    | 4.7    | 4.7    | 3.5    | 3.5    | 3.5    | 3.5    |
| 70°   | 3.5    | 3.5    | 3.5    | 3.5    | 3.5    | 2.3    | 2.3    | 2.3    |
| 72.5° | 2.3    | 2.3    | 2.3    | 2.3    | 2.3    | 2.3    | 2.3    | 2.3    |
| 75°   | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    |
| 77.5° | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    |
| 80°   | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    |
| 82.5° | 1.2    | 1.2    | 1.2    | 1.2    | 1.2    | 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)