

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: P840160

Luminaire Tested: **LD4C30D010 EU4309030 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: P840160  
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: LD4C30D010 EU4309030 4LBCSSQMMS  
Description: 4 INCH 3000 LUMEN PORTFOLIO LED DOWNLIGHT WITH, 3000K, 90CRI LEDS  
AND 4LBCSSQ TRIM WITH MMS FINISH  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

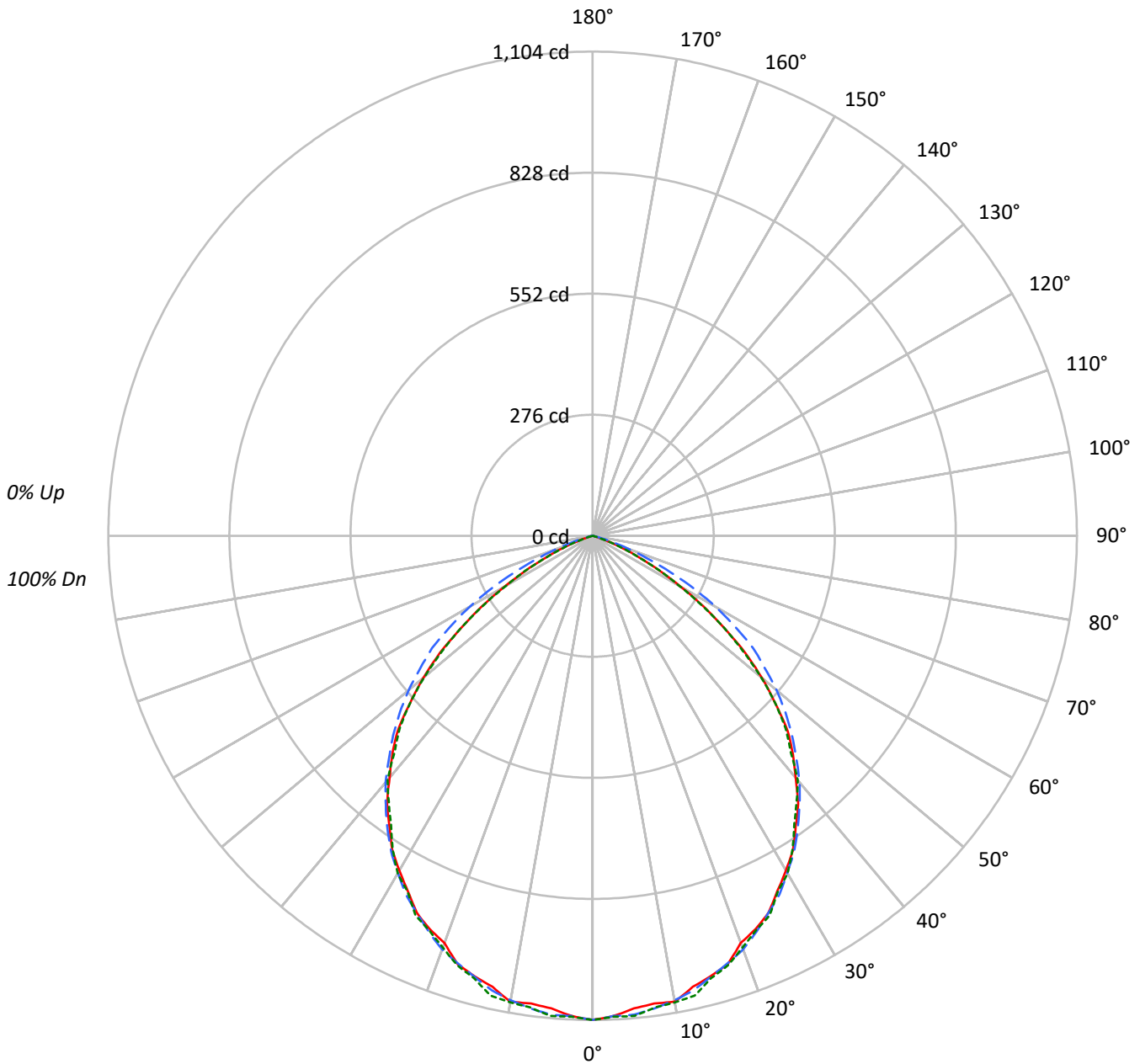
Lumens per Lamp: N/A  
Luminaire Lumens: 2358.0 lumens  
Efficiency: N/A  
Efficacy: 74.6 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.2 / 1.29  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
CIE Type: Direct

Input Watts (W): 31.6  
Input Voltage (V):  
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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CATALOG NUMBER: LD4C30D010 EU4309030 4LBCSSQMMS

### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|-----|
| RF  | 20  |     |     |     | 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 |    |    |    | 100 |
| 1   | 111 | 108 | 104 | 101 | 109 | 105 | 102 | 100 | 101 | 99  | 96  | 97  | 95  | 94  | 94  | 92  | 91  | 89  |    |    |    | 89  |
| 2   | 103 | 96  | 91  | 86  | 100 | 94  | 89  | 85  | 91  | 87  | 83  | 88  | 84  | 81  | 85  | 82  | 79  | 77  |    |    |    | 77  |
| 3   | 95  | 86  | 79  | 74  | 93  | 85  | 78  | 73  | 82  | 76  | 72  | 79  | 74  | 71  | 77  | 73  | 69  | 67  |    |    |    | 67  |
| 4   | 88  | 77  | 70  | 64  | 86  | 76  | 69  | 63  | 74  | 67  | 63  | 71  | 66  | 62  | 69  | 65  | 61  | 59  |    |    |    | 59  |
| 5   | 81  | 70  | 62  | 56  | 79  | 69  | 61  | 56  | 67  | 60  | 55  | 65  | 59  | 54  | 63  | 58  | 54  | 52  |    |    |    | 52  |
| 6   | 75  | 63  | 55  | 49  | 73  | 62  | 55  | 49  | 61  | 54  | 49  | 59  | 53  | 48  | 57  | 52  | 48  | 46  |    |    |    | 46  |
| 7   | 70  | 58  | 50  | 44  | 68  | 57  | 49  | 44  | 55  | 49  | 44  | 54  | 48  | 43  | 53  | 47  | 43  | 41  |    |    |    | 41  |
| 8   | 65  | 53  | 45  | 40  | 64  | 52  | 45  | 39  | 51  | 44  | 39  | 50  | 44  | 39  | 49  | 43  | 39  | 37  |    |    |    | 37  |
| 9   | 61  | 49  | 41  | 36  | 60  | 48  | 41  | 36  | 47  | 40  | 36  | 46  | 40  | 35  | 45  | 39  | 35  | 33  |    |    |    | 33  |
| 10  | 57  | 45  | 38  | 33  | 56  | 44  | 37  | 33  | 44  | 37  | 32  | 43  | 37  | 32  | 42  | 36  | 32  | 31  |    |    |    | 31  |

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

|     | 0°     | 45°    | 90°    |
|-----|--------|--------|--------|
| 0°  | 106514 | 106514 | 106514 |
| 5°  | 104790 | 106156 | 106456 |
| 10° | 105698 | 105384 | 105845 |
| 15° | 103848 | 103998 | 104308 |
| 20° | 101429 | 103041 | 102558 |
| 25° | 100991 | 100991 | 101662 |
| 30° | 98180  | 98870  | 99049  |
| 35° | 95116  | 96035  | 94374  |
| 40° | 90651  | 92427  | 91634  |
| 45° | 85790  | 87727  | 84944  |
| 50° | 75550  | 82140  | 75085  |
| 55° | 61200  | 75179  | 61452  |
| 60° | 44771  | 62332  | 43883  |
| 65° | 27215  | 44384  | 26484  |
| 70° | 10608  | 23895  | 10184  |
| 75° | 1156   | 6450   | 1156   |
| 80° | 889    | 889    | 889    |
| 85° | 0      | 0      | 0      |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 104.2  | 4.4       |
| 10°-20°   | 294.8  | 12.5      |
| 20°-30°   | 437.5  | 18.6      |
| 30°-40°   | 506.9  | 21.5      |
| 40°-50°   | 486.0  | 20.6      |
| 50°-60°   | 357.3  | 15.2      |
| 60°-70°   | 154.3  | 6.5       |
| 70°-80°   | 16.7   | 0.7       |
| 80°-90°   | 0.2    | 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°    | 836.5  | 35.5      |
| 0°-40°    | 1343.4 | 57.0      |
| 0°-60°    | 2186.8 | 92.7      |
| 0°-90°    | 2358.0 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 2358.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1104 | 1104  | 1104 | 1104  | 1104 |      |
| 5°  | 1082 | 1093  | 1096 | 1098  | 1099 | 103  |
| 15° | 1040 | 1046  | 1041 | 1043  | 1044 | 293  |
| 25° | 949  | 947   | 949  | 950   | 955  | 434  |
| 35° | 808  | 812   | 815  | 814   | 801  | 505  |
| 45° | 629  | 630   | 643  | 634   | 622  | 478  |
| 55° | 364  | 401   | 447  | 400   | 365  | 327  |
| 65° | 119  | 149   | 194  | 147   | 116  | 122  |
| 75° | 3    | 5     | 17   | 3     | 3    | 10   |
| 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°    | 22.5°  | 25°    | 30°    | 35°    | 40°    | 45°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1103.9 | 1103.9 | 1103.9 | 1103.9 | 1103.9 | 1103.9 | 1103.9 | 1103.9 | 1103.9 | 1103.9 | 1103.9 |
| 2.5°  | 1096.0 | 1108.5 | 1110.1 | 1102.3 | 1099.1 | 1094.4 | 1105.4 | 1097.6 | 1100.7 | 1097.6 | 1096.0 |
| 5°    | 1081.9 | 1096.0 | 1097.6 | 1097.6 | 1094.4 | 1092.9 | 1097.6 | 1096.0 | 1094.4 | 1091.3 | 1096.0 |
| 7.5°  | 1075.6 | 1083.4 | 1091.3 | 1081.9 | 1086.6 | 1085.0 | 1096.0 | 1091.3 | 1089.7 | 1089.7 | 1086.6 |
| 10°   | 1078.8 | 1077.2 | 1083.4 | 1074.0 | 1077.2 | 1074.0 | 1083.4 | 1083.4 | 1080.3 | 1077.2 | 1075.6 |
| 12.5° | 1053.6 | 1066.2 | 1066.2 | 1064.6 | 1061.5 | 1056.8 | 1066.2 | 1072.5 | 1063.0 | 1063.0 | 1061.5 |
| 15°   | 1039.6 | 1042.7 | 1044.2 | 1044.2 | 1042.7 | 1045.8 | 1050.5 | 1044.2 | 1045.8 | 1038.0 | 1041.1 |
| 17.5° | 1023.9 | 1017.6 | 1022.3 | 1019.2 | 1020.8 | 1023.9 | 1030.2 | 1030.2 | 1020.8 | 1019.2 | 1022.3 |
| 20°   | 987.8  | 1006.6 | 1008.2 | 998.8  | 1000.3 | 1000.3 | 1011.3 | 1001.9 | 1008.2 | 1000.3 | 1003.5 |
| 22.5° | 970.5  | 983.1  | 984.7  | 972.1  | 979.9  | 970.5  | 981.5  | 967.4  | 983.1  | 972.1  | 976.8  |
| 25°   | 948.6  | 947.1  | 951.7  | 945.5  | 947.1  | 947.1  | 954.9  | 948.6  | 953.3  | 947.1  | 948.6  |
| 27.5° | 912.6  | 925.1  | 923.5  | 917.2  | 920.4  | 918.8  | 934.5  | 917.2  | 926.6  | 918.8  | 922.0  |
| 30°   | 881.2  | 892.2  | 889.0  | 882.8  | 882.8  | 878.0  | 895.3  | 890.6  | 889.0  | 889.0  | 887.4  |
| 32.5° | 849.8  | 851.4  | 848.3  | 849.8  | 851.4  | 845.1  | 859.2  | 853.0  | 851.4  | 853.0  | 854.6  |
| 35°   | 807.5  | 807.5  | 810.6  | 805.9  | 812.2  | 812.2  | 824.7  | 816.9  | 815.3  | 810.6  | 815.3  |
| 37.5° | 769.9  | 765.2  | 766.7  | 766.7  | 769.9  | 773.0  | 779.3  | 776.1  | 776.1  | 771.4  | 774.6  |
| 40°   | 719.7  | 716.6  | 721.2  | 721.2  | 726.0  | 726.0  | 732.2  | 729.1  | 733.8  | 733.8  | 733.8  |
| 42.5° | 675.8  | 675.8  | 672.7  | 677.3  | 678.9  | 677.3  | 688.3  | 686.8  | 688.3  | 685.2  | 686.8  |
| 45°   | 628.7  | 628.7  | 625.6  | 624.1  | 631.9  | 630.3  | 642.9  | 638.1  | 644.4  | 641.3  | 642.9  |
| 47.5° | 564.4  | 572.3  | 567.6  | 572.3  | 581.7  | 583.3  | 591.1  | 588.0  | 594.2  | 589.6  | 595.8  |
| 50°   | 503.3  | 503.3  | 508.0  | 514.3  | 523.7  | 525.3  | 534.7  | 541.0  | 544.1  | 545.6  | 547.2  |
| 52.5° | 439.0  | 437.4  | 442.2  | 450.0  | 457.9  | 464.1  | 473.5  | 482.9  | 489.2  | 498.6  | 493.9  |
| 55°   | 363.8  | 366.9  | 371.6  | 381.0  | 393.6  | 401.4  | 409.2  | 421.8  | 432.8  | 437.4  | 446.9  |
| 57.5° | 299.5  | 296.3  | 299.5  | 312.0  | 326.1  | 332.4  | 343.4  | 355.9  | 371.6  | 381.0  | 384.2  |
| 60°   | 232.0  | 233.6  | 236.8  | 247.8  | 258.7  | 268.1  | 272.8  | 293.2  | 307.3  | 316.7  | 323.0  |
| 62.5° | 170.9  | 174.1  | 177.2  | 186.6  | 197.5  | 205.4  | 213.2  | 230.5  | 243.0  | 252.4  | 258.7  |
| 65°   | 119.2  | 120.7  | 125.5  | 130.1  | 141.1  | 148.9  | 155.2  | 169.3  | 181.9  | 189.7  | 194.4  |
| 67.5° | 73.7   | 75.2   | 78.4   | 84.7   | 92.5   | 98.8   | 105.0  | 114.4  | 125.5  | 133.3  | 134.9  |
| 70°   | 37.6   | 39.2   | 40.8   | 45.5   | 51.8   | 54.9   | 59.6   | 67.4   | 75.2   | 81.5   | 84.7   |
| 72.5° | 12.5   | 12.5   | 14.1   | 17.3   | 20.4   | 23.5   | 25.1   | 32.9   | 39.2   | 42.3   | 43.9   |
| 75°   | 3.1    | 3.1    | 3.1    | 3.1    | 3.1    | 4.7    | 4.7    | 9.4    | 12.5   | 15.7   | 17.3   |
| 77.5° | 1.6    | 1.6    | 1.6    | 1.6    | 1.6    | 1.6    | 1.6    | 1.6    | 1.6    | 3.1    | 3.1    |
| 80°   | 1.6    | 1.6    | 1.6    | 1.6    | 1.6    | 1.6    | 1.6    | 1.6    | 1.6    | 1.6    | 1.6    |
| 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°    | 1103.9 | 1103.9 | 1103.9 | 1103.9 | 1103.9 | 1103.9 | 1103.9 | 1103.9 | 1103.9 | 1103.9 |
| 2.5°  | 1103.9 | 1100.7 | 1099.1 | 1100.7 | 1100.7 | 1099.1 | 1103.9 | 1110.1 | 1117.9 | 1097.6 |
| 5°    | 1102.3 | 1099.1 | 1102.3 | 1092.9 | 1097.6 | 1094.4 | 1100.7 | 1099.1 | 1105.4 | 1099.1 |
| 7.5°  | 1097.6 | 1091.3 | 1092.9 | 1088.2 | 1094.4 | 1086.6 | 1091.3 | 1100.7 | 1094.4 | 1085.0 |
| 10°   | 1081.9 | 1078.8 | 1089.7 | 1074.0 | 1070.9 | 1077.2 | 1089.7 | 1080.3 | 1077.2 | 1080.3 |
| 12.5° | 1066.2 | 1066.2 | 1070.9 | 1058.4 | 1059.9 | 1063.0 | 1069.3 | 1063.0 | 1066.2 | 1074.0 |
| 15°   | 1049.0 | 1045.8 | 1053.6 | 1044.2 | 1042.7 | 1039.6 | 1045.8 | 1045.8 | 1049.0 | 1044.2 |
| 17.5° | 1028.6 | 1023.9 | 1023.9 | 1020.8 | 1019.2 | 1027.0 | 1030.2 | 1031.7 | 1033.3 | 1027.0 |
| 20°   | 1003.5 | 1001.9 | 1006.6 | 1001.9 | 1003.5 | 1005.1 | 1005.1 | 1001.9 | 1016.0 | 998.8  |
| 22.5° | 976.8  | 981.5  | 975.3  | 972.1  | 975.3  | 978.4  | 978.4  | 979.9  | 976.8  | 973.7  |
| 25°   | 950.2  | 953.3  | 954.9  | 945.5  | 950.2  | 945.5  | 956.5  | 958.0  | 951.7  | 954.9  |
| 27.5° | 926.6  | 922.0  | 920.4  | 914.1  | 917.2  | 915.7  | 917.2  | 917.2  | 926.6  | 914.1  |
| 30°   | 890.6  | 885.9  | 887.4  | 882.8  | 884.3  | 882.8  | 884.3  | 884.3  | 890.6  | 889.0  |
| 32.5° | 856.1  | 851.4  | 853.0  | 848.3  | 848.3  | 849.8  | 846.7  | 846.7  | 851.4  | 848.3  |
| 35°   | 823.1  | 812.2  | 813.7  | 812.2  | 813.7  | 807.5  | 807.5  | 805.9  | 809.1  | 801.2  |
| 37.5° | 776.1  | 771.4  | 769.9  | 768.3  | 769.9  | 766.7  | 769.9  | 765.2  | 769.9  | 763.6  |
| 40°   | 733.8  | 730.6  | 732.2  | 722.8  | 722.8  | 724.4  | 721.2  | 719.7  | 721.2  | 727.5  |
| 42.5° | 691.5  | 685.2  | 682.1  | 678.9  | 680.5  | 675.8  | 674.2  | 671.1  | 674.2  | 667.9  |
| 45°   | 641.3  | 641.3  | 639.7  | 631.9  | 633.5  | 633.5  | 627.2  | 620.9  | 622.5  | 622.5  |
| 47.5° | 595.8  | 592.7  | 591.1  | 583.3  | 581.7  | 580.2  | 573.8  | 569.2  | 569.2  | 564.4  |
| 50°   | 545.6  | 542.5  | 537.8  | 530.0  | 526.8  | 517.4  | 512.7  | 506.5  | 500.2  | 500.2  |
| 52.5° | 498.6  | 487.6  | 481.3  | 468.8  | 464.1  | 459.4  | 446.9  | 442.2  | 437.4  | 432.8  |
| 55°   | 442.2  | 432.8  | 420.2  | 406.1  | 399.8  | 392.0  | 379.4  | 370.0  | 363.8  | 365.3  |
| 57.5° | 387.3  | 371.6  | 359.1  | 340.3  | 332.4  | 327.7  | 315.1  | 302.6  | 296.3  | 296.3  |
| 60°   | 319.9  | 307.3  | 291.7  | 274.4  | 268.1  | 260.3  | 244.6  | 236.8  | 232.0  | 227.4  |
| 62.5° | 255.6  | 246.2  | 232.0  | 210.1  | 205.4  | 197.5  | 186.6  | 177.2  | 172.5  | 172.5  |
| 65°   | 191.3  | 181.9  | 169.3  | 153.7  | 147.4  | 141.1  | 131.7  | 122.3  | 117.6  | 116.0  |
| 67.5° | 134.9  | 123.9  | 112.9  | 100.4  | 95.6   | 92.5   | 83.1   | 76.8   | 73.7   | 72.1   |
| 70°   | 81.5   | 75.2   | 67.4   | 58.0   | 53.3   | 50.2   | 43.9   | 39.2   | 37.6   | 36.1   |
| 72.5° | 42.3   | 37.6   | 31.3   | 25.1   | 21.9   | 18.8   | 15.7   | 12.5   | 11.0   | 11.0   |
| 75°   | 15.7   | 12.5   | 7.9    | 4.7    | 3.1    | 3.1    | 3.1    | 3.1    | 3.1    | 3.1    |
| 77.5° | 3.1    | 1.6    | 1.6    | 1.6    | 1.6    | 1.6    | 1.6    | 1.6    | 1.6    | 1.6    |
| 80°   | 1.6    | 1.6    | 1.6    | 1.6    | 1.6    | 1.6    | 1.6    | 1.6    | 1.6    | 1.6    |
| 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)