

Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P735860

Luminaire Tested: S122DR-S1005D940-X4F0-XX-UDD-W-W

Issue Date: 1/24/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P735860  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2308-143-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 1/24/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S122DR-S1005D940-X4F0-XX-UDD-W-W  
Description: DEFINE 2 DIRECT RECESSED WITH WALL WASH OPTIC  
Light Source: 4000K CCT, 90 CRI LEDS  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3981.2 lumens  
Efficiency: N/A  
Efficacy: 95.2 lumens/watt  
Spacing Criteria (0/90/45): 0.9 / 1.11 / 1.12  
Luminous Opening: Rectangular (W 4' x L: 0.14' x H: 0')  
CIE Type: Direct

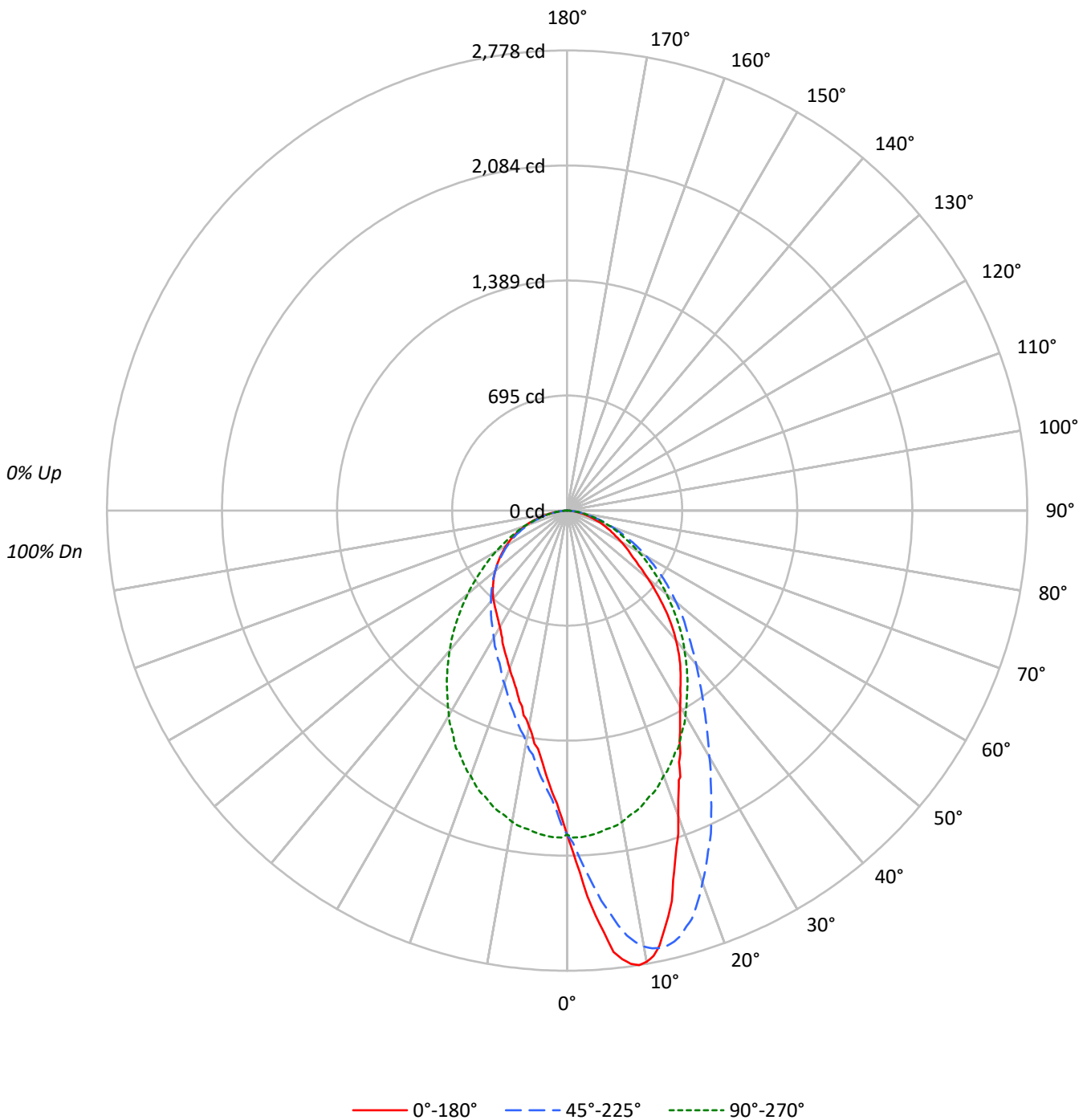
Input Watts (W): 41.8  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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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 | 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   | 110 | 106 | 102 | 98  | 107 | 103 | 100 | 97  | 99  | 96  | 94  | 95  | 93  | 91  | 92  | 90  | 88  | 86  |    |    |    |    | 86  |   |  |   |
| 2   | 101 | 94  | 87  | 82  | 98  | 92  | 86  | 81  | 88  | 83  | 79  | 85  | 81  | 78  | 82  | 79  | 76  | 74  |    |    |    |    | 74  |   |  |   |
| 3   | 93  | 83  | 76  | 70  | 91  | 82  | 75  | 69  | 79  | 73  | 68  | 76  | 71  | 67  | 74  | 69  | 66  | 64  |    |    |    |    | 64  |   |  |   |
| 4   | 86  | 75  | 67  | 60  | 83  | 73  | 66  | 60  | 71  | 64  | 59  | 69  | 63  | 58  | 67  | 62  | 58  | 56  |    |    |    |    | 56  |   |  |   |
| 5   | 79  | 67  | 59  | 53  | 77  | 66  | 58  | 53  | 64  | 57  | 52  | 62  | 56  | 52  | 61  | 55  | 51  | 49  |    |    |    |    | 49  |   |  |   |
| 6   | 74  | 61  | 53  | 47  | 72  | 60  | 52  | 47  | 59  | 52  | 46  | 57  | 51  | 46  | 55  | 50  | 46  | 44  |    |    |    |    | 44  |   |  |   |
| 7   | 69  | 56  | 48  | 42  | 67  | 55  | 47  | 42  | 54  | 47  | 42  | 52  | 46  | 41  | 51  | 45  | 41  | 39  |    |    |    |    | 39  |   |  |   |
| 8   | 64  | 51  | 43  | 38  | 63  | 51  | 43  | 38  | 50  | 43  | 38  | 48  | 42  | 37  | 47  | 41  | 37  | 35  |    |    |    |    | 35  |   |  |   |
| 9   | 60  | 48  | 40  | 35  | 59  | 47  | 40  | 34  | 46  | 39  | 34  | 45  | 39  | 34  | 44  | 38  | 34  | 32  |    |    |    |    | 32  |   |  |   |
| 10  | 57  | 44  | 37  | 32  | 55  | 44  | 36  | 32  | 43  | 36  | 31  | 42  | 36  | 31  | 41  | 35  | 31  | 30  |    |    |    |    | 30  |   |  |   |

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

|     | 0°    | 45°   | 90°   | 135°  | 180°  |
|-----|-------|-------|-------|-------|-------|
| 0°  | 37610 | 37610 | 37610 | 37610 | 37610 |
| 5°  | 49327 | 45591 | 37806 | 31709 | 30256 |
| 10° | 53992 | 52181 | 37246 | 27717 | 25828 |
| 15° | 48572 | 52853 | 36235 | 25021 | 22908 |
| 20° | 40079 | 48881 | 34853 | 22695 | 20768 |
| 25° | 34254 | 43609 | 33626 | 20992 | 19253 |
| 30° | 30296 | 38086 | 31699 | 19669 | 18029 |
| 35° | 28022 | 33733 | 29725 | 18744 | 17514 |
| 40° | 25646 | 30436 | 27671 | 17951 | 17411 |
| 45° | 22592 | 27784 | 25590 | 17400 | 17182 |
| 50° | 19021 | 25618 | 23444 | 16931 | 16970 |
| 55° | 15998 | 23568 | 21182 | 16360 | 16675 |
| 60° | 14424 | 21301 | 19233 | 15873 | 16338 |
| 65° | 13090 | 18716 | 17124 | 15109 | 16023 |
| 70° | 11791 | 16174 | 15415 | 13982 | 15191 |
| 75° | 10286 | 13680 | 13182 | 12685 | 13880 |
| 80° | 8634  | 10715 | 10715 | 11014 | 11611 |
| 85° | 6528  | 7719  | 8006  | 8601  | 8314  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 40796 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 192.6  | 4.8       |
| 10°-20°   | 528.5  | 13.3      |
| 20°-30°   | 693.1  | 17.4      |
| 30°-40°   | 732.5  | 18.4      |
| 40°-50°   | 680.1  | 17.1      |
| 50°-60°   | 544.4  | 13.7      |
| 60°-70°   | 372.3  | 9.4       |
| 70°-80°   | 192.1  | 4.8       |
| 80°-90°   | 45.6   | 1.1       |
| 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°    | 1414.2 | 35.5      |
| 0°-40°    | 2146.7 | 53.9      |
| 0°-60°    | 3371.2 | 84.7      |
| 0°-90°    | 3981.2 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 3981.2 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 45°  | 90°  | 135° | 180° | Flux |
|-----|------|------|------|------|------|------|
| 0°  | 1957 | 1957 | 1957 | 1957 | 1957 |      |
| 5°  | 2556 | 2363 | 1959 | 1643 | 1568 | 252  |
| 15° | 2441 | 2656 | 1821 | 1257 | 1151 | 670  |
| 25° | 1615 | 2056 | 1586 | 990  | 908  | 744  |
| 35° | 1194 | 1438 | 1267 | 799  | 746  | 745  |
| 45° | 831  | 1022 | 941  | 640  | 632  | 638  |
| 55° | 477  | 703  | 632  | 488  | 498  | 437  |
| 65° | 288  | 412  | 376  | 332  | 352  | 285  |
| 75° | 138  | 184  | 178  | 171  | 187  | 147  |
| 85° | 30   | 35   | 36   | 39   | 38   | 36   |
| 90° | 0    | 0    | 0    | 0    | 0    |      |



TEST NUMBER: P735860

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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    | 112.5° | 135°   | 157.5° | 180°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1956.7 | 1956.7 | 1956.7 | 1956.7 | 1956.7 | 1956.7 | 1956.7 | 1956.7 | 1956.7 |
| 1°    | 2064.3 | 2053.5 | 2006.5 | 2009.2 | 1974.2 | 1935.2 | 1898.9 | 1876.0 | 1857.2 |
| 2°    | 2185.3 | 2163.8 | 2089.9 | 2053.5 | 1974.2 | 1890.8 | 1815.5 | 1795.3 | 1769.8 |
| 3°    | 2331.9 | 2280.8 | 2178.6 | 2092.5 | 1971.5 | 1850.5 | 1746.9 | 1710.6 | 1706.6 |
| 4°    | 2450.3 | 2404.5 | 2268.7 | 2132.9 | 1964.8 | 1811.5 | 1694.5 | 1655.5 | 1636.6 |
| 5°    | 2556.5 | 2526.9 | 2362.9 | 2184.0 | 1959.4 | 1773.8 | 1643.4 | 1589.6 | 1568.1 |
| 6°    | 2678.9 | 2618.4 | 2438.2 | 2235.1 | 1950.0 | 1737.5 | 1597.6 | 1533.1 | 1503.5 |
| 7°    | 2728.6 | 2691.0 | 2522.9 | 2268.7 | 1937.9 | 1695.8 | 1539.8 | 1469.9 | 1448.4 |
| 8°    | 2763.6 | 2748.8 | 2590.1 | 2323.9 | 1932.5 | 1656.8 | 1488.7 | 1445.7 | 1420.1 |
| 9°    | 2778.4 | 2766.3 | 2638.5 | 2346.7 | 1923.1 | 1636.6 | 1463.2 | 1391.9 | 1363.6 |
| 10°   | 2766.3 | 2771.7 | 2673.5 | 2381.7 | 1908.3 | 1595.0 | 1420.1 | 1358.3 | 1323.3 |
| 11°   | 2738.1 | 2751.5 | 2692.3 | 2422.0 | 1889.5 | 1561.3 | 1381.1 | 1317.9 | 1284.3 |
| 12°   | 2684.3 | 2713.8 | 2700.4 | 2450.3 | 1872.0 | 1531.8 | 1354.2 | 1293.7 | 1264.1 |
| 13°   | 2600.9 | 2666.8 | 2695.0 | 2462.4 | 1861.2 | 1498.1 | 1320.6 | 1250.7 | 1213.0 |
| 14°   | 2525.6 | 2594.2 | 2680.2 | 2489.3 | 1842.4 | 1460.5 | 1289.7 | 1219.8 | 1187.5 |
| 15°   | 2440.9 | 2520.2 | 2656.0 | 2497.3 | 1820.9 | 1429.5 | 1257.4 | 1180.8 | 1151.2 |
| 16°   | 2322.5 | 2428.7 | 2611.6 | 2506.7 | 1795.3 | 1394.6 | 1227.8 | 1155.2 | 1116.2 |
| 17°   | 2224.3 | 2338.6 | 2578.0 | 2512.1 | 1781.9 | 1367.7 | 1202.3 | 1116.2 | 1090.7 |
| 18°   | 2134.2 | 2263.3 | 2517.5 | 2508.1 | 1760.4 | 1336.8 | 1164.6 | 1088.0 | 1063.8 |
| 19°   | 2063.0 | 2167.9 | 2457.0 | 2498.7 | 1730.8 | 1307.2 | 1136.4 | 1067.8 | 1039.5 |
| 20°   | 1959.4 | 2080.4 | 2389.7 | 2494.6 | 1703.9 | 1280.3 | 1109.5 | 1039.5 | 1015.3 |
| 21°   | 1873.3 | 1997.1 | 2327.9 | 2481.2 | 1685.1 | 1254.7 | 1089.3 | 1012.7 | 991.1  |
| 22.5° | 1760.4 | 1869.3 | 2224.3 | 2455.6 | 1643.4 | 1211.7 | 1044.9 | 987.1  | 957.5  |
| 23°   | 1746.9 | 1839.7 | 2197.4 | 2447.6 | 1631.3 | 1202.3 | 1030.1 | 972.3  | 948.1  |
| 24°   | 1662.2 | 1760.4 | 2134.2 | 2422.0 | 1600.3 | 1172.7 | 1005.9 | 954.8  | 926.6  |
| 25°   | 1615.1 | 1695.8 | 2056.2 | 2397.8 | 1585.5 | 1145.8 | 989.8  | 932.0  | 907.8  |
| 26°   | 1549.2 | 1642.0 | 1986.3 | 2362.9 | 1553.3 | 1121.6 | 964.2  | 911.8  | 888.9  |
| 27°   | 1500.8 | 1578.8 | 1913.7 | 2337.3 | 1515.6 | 1096.0 | 944.1  | 891.6  | 863.4  |
| 28°   | 1453.8 | 1529.1 | 1843.7 | 2295.6 | 1488.7 | 1067.8 | 929.3  | 874.1  | 847.2  |
| 29°   | 1405.3 | 1471.2 | 1787.3 | 2263.3 | 1463.2 | 1043.6 | 906.4  | 851.3  | 825.7  |
| 30°   | 1365.0 | 1425.5 | 1716.0 | 2220.3 | 1428.2 | 1015.3 | 886.2  | 835.1  | 812.3  |
| 32.5° | 1272.2 | 1323.3 | 1570.8 | 2118.1 | 1344.8 | 958.9  | 837.8  | 790.8  | 777.3  |
| 35°   | 1194.2 | 1227.8 | 1437.6 | 2003.8 | 1266.8 | 898.3  | 798.8  | 753.1  | 746.4  |
| 37.5° | 1112.2 | 1144.4 | 1316.6 | 1884.1 | 1184.8 | 843.2  | 754.4  | 724.9  | 719.5  |
| 40°   | 1022.1 | 1065.1 | 1213.0 | 1765.8 | 1102.8 | 789.4  | 715.4  | 692.6  | 693.9  |
| 42.5° | 932.0  | 981.7  | 1112.2 | 1627.2 | 1026.1 | 738.3  | 677.8  | 661.7  | 664.3  |
| 45°   | 831.1  | 894.3  | 1022.1 | 1500.8 | 941.4  | 689.9  | 640.1  | 632.1  | 632.1  |
| 47.5° | 726.2  | 806.9  | 944.1  | 1370.4 | 860.7  | 641.5  | 603.8  | 598.4  | 601.1  |
| 50°   | 636.1  | 708.7  | 856.7  | 1244.0 | 784.0  | 597.1  | 566.2  | 564.8  | 567.5  |
| 52.5° | 547.3  | 620.0  | 780.0  | 1125.6 | 706.0  | 556.8  | 529.9  | 529.9  | 532.5  |
| 55°   | 477.4  | 533.9  | 703.3  | 1001.9 | 632.1  | 509.7  | 488.2  | 492.2  | 497.6  |
| 57.5° | 429.0  | 466.7  | 628.0  | 883.5  | 563.5  | 464.0  | 450.5  | 453.2  | 459.9  |
| 60°   | 375.2  | 404.8  | 554.1  | 774.6  | 500.3  | 419.6  | 412.9  | 418.2  | 425.0  |
| 62.5° | 326.8  | 352.3  | 484.1  | 676.4  | 431.7  | 376.5  | 373.9  | 381.9  | 388.7  |
| 65°   | 287.8  | 305.3  | 411.5  | 576.9  | 376.5  | 333.5  | 332.2  | 344.3  | 352.3  |



TEST NUMBER: P735860

CATALOG NUMBER: S122DR-S1005D940-X4F0-XX-UDD-W-W

**CANDELA DISTRIBUTION (continued):**

|       | 0°    | 22.5° | 45°   | 67.5° | 90°   | 112.5° | 135°  | 157.5° | 180°  |
|-------|-------|-------|-------|-------|-------|--------|-------|--------|-------|
| 67.5° | 247.4 | 260.9 | 348.3 | 482.8 | 321.4 | 290.5  | 290.5 | 303.9  | 310.7 |
| 70°   | 209.8 | 220.6 | 287.8 | 398.1 | 274.3 | 247.4  | 248.8 | 264.9  | 270.3 |
| 72.5° | 170.8 | 180.2 | 234.0 | 320.1 | 221.9 | 207.1  | 211.1 | 224.6  | 230.0 |
| 75°   | 138.5 | 145.2 | 184.2 | 252.8 | 177.5 | 165.4  | 170.8 | 182.9  | 186.9 |
| 77.5° | 106.2 | 111.6 | 135.8 | 185.6 | 135.8 | 129.1  | 134.5 | 145.2  | 145.2 |
| 80°   | 78.0  | 79.3  | 96.8  | 130.4 | 96.8  | 92.8   | 99.5  | 104.9  | 104.9 |
| 82.5° | 51.1  | 53.8  | 63.2  | 83.4  | 64.6  | 63.2   | 65.9  | 69.9   | 69.9  |
| 85°   | 29.6  | 30.9  | 35.0  | 45.7  | 36.3  | 36.3   | 39.0  | 39.0   | 37.7  |
| 87.5° | 12.1  | 13.4  | 14.8  | 17.5  | 16.1  | 17.5   | 17.5  | 14.8   | 16.1  |
| 90°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   |

(END OF REPORT)