

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: FAIL-SAFE

Report Number: P

Luminaire Tested: **4APN-32-34L950-UNV-ASY**

Issue Date: 06/06/2024



Test Information

Test Method: LM-79-08
Report Number: P
Test Lab: INNOVATION CENTER(G2)
Issue Date: 06/06/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 4APN-32-34L950-UNV-ASY
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient and Exam Light
w/ ASYMMETRIC Lens
Light Source: 5000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

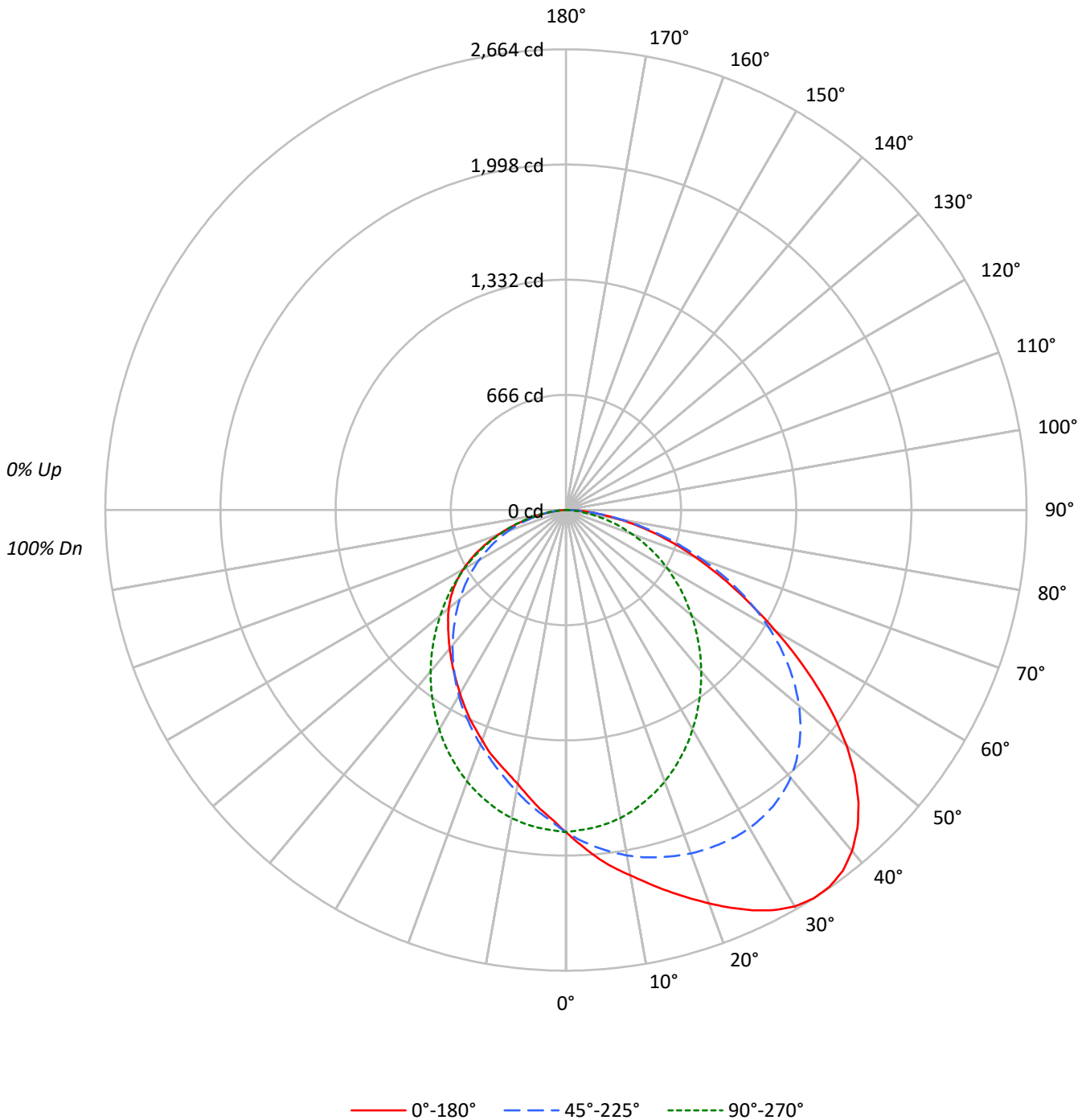
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5769.6 lumens
Efficiency: N/A
Efficacy: 79.0 lumens/watt
Spacing Criteria (0/90/45): 1.53 / 1.18 / 1.46
Luminous Opening: Rectangular (W 0.29' x L: 3.83' x H: 0')
CIE Type: Direct

Input Watts (W): 73
Input Voltage (V): 120
Input Current (A_{in}): 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

TEST NUMBER: P
CATALOG NUMBER: 4APN-32-34L950-UNV-ASY

Luminous Intensity Polar Plot





TEST NUMBER: P
 CATALOG NUMBER: 4APN-32-34L950-UNV-ASY

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 | 102 | 102 | 102 | 100 |
| 1 | 109 | 104 | 100 | 96 | 106 | 102 | 98 | 94 | 97 | 94 | 91 | 93 | 91 | 88 | 90 | 88 | 86 | 86 | 86 | 86 | 84 |
| 2 | 99 | 90 | 83 | 78 | 96 | 88 | 82 | 77 | 85 | 80 | 75 | 82 | 77 | 73 | 79 | 75 | 72 | 72 | 72 | 72 | 69 |
| 3 | 90 | 79 | 71 | 64 | 87 | 78 | 70 | 64 | 75 | 68 | 63 | 72 | 66 | 61 | 69 | 64 | 60 | 60 | 60 | 60 | 58 |
| 4 | 82 | 70 | 61 | 54 | 80 | 69 | 60 | 54 | 66 | 59 | 53 | 64 | 57 | 52 | 62 | 56 | 52 | 52 | 52 | 52 | 49 |
| 5 | 75 | 62 | 53 | 46 | 73 | 61 | 53 | 46 | 59 | 51 | 46 | 57 | 50 | 45 | 55 | 49 | 45 | 45 | 45 | 45 | 43 |
| 6 | 69 | 56 | 47 | 40 | 68 | 55 | 46 | 40 | 53 | 46 | 40 | 51 | 45 | 39 | 50 | 44 | 39 | 39 | 39 | 39 | 37 |
| 7 | 64 | 51 | 42 | 36 | 63 | 50 | 41 | 35 | 48 | 41 | 35 | 47 | 40 | 35 | 45 | 39 | 35 | 35 | 35 | 35 | 33 |
| 8 | 60 | 46 | 37 | 32 | 58 | 45 | 37 | 31 | 44 | 37 | 31 | 43 | 36 | 31 | 42 | 35 | 31 | 31 | 31 | 31 | 29 |
| 9 | 56 | 42 | 34 | 28 | 54 | 42 | 34 | 28 | 40 | 33 | 28 | 39 | 33 | 28 | 38 | 32 | 28 | 28 | 28 | 28 | 26 |
| 10 | 52 | 39 | 31 | 26 | 51 | 38 | 31 | 26 | 37 | 30 | 25 | 36 | 30 | 25 | 36 | 30 | 25 | 25 | 25 | 25 | 23 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 90° | 180° |
|-----|-------|-------|-------|
| 0° | 17933 | 17933 | 17933 |
| 5° | 19459 | 17824 | 16751 |
| 10° | 20964 | 17686 | 15718 |
| 15° | 22740 | 17428 | 15071 |
| 20° | 24794 | 17123 | 14511 |
| 25° | 27123 | 16721 | 14061 |
| 30° | 29423 | 16282 | 13609 |
| 35° | 31251 | 15800 | 13317 |
| 40° | 32358 | 15299 | 13143 |
| 45° | 32585 | 14771 | 13113 |
| 50° | 31728 | 14208 | 13255 |
| 55° | 29711 | 13698 | 13339 |
| 60° | 27007 | 13076 | 13209 |
| 65° | 24486 | 12365 | 12698 |
| 70° | 22412 | 11465 | 11659 |
| 75° | 20332 | 10307 | 10025 |
| 80° | 17786 | 8616 | 7723 |
| 85° | 14968 | 6263 | 5755 |



TEST NUMBER: P
 CATALOG NUMBER: 4APN-32-34L950-UNV-ASY

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 176.9 | 3.1 |
| 10°-20° | 514.5 | 8.9 |
| 20°-30° | 806.1 | 14.0 |
| 30°-40° | 1010.5 | 17.5 |
| 40°-50° | 1075.8 | 18.6 |
| 50°-60° | 971.2 | 16.8 |
| 60°-70° | 718.9 | 12.5 |
| 70°-80° | 394.5 | 6.8 |
| 80°-90° | 101.3 | 1.8 |
| 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° | 1497.5 | 26.0 |
| 0°-40° | 2508.0 | 43.5 |
| 0°-60° | 4554.9 | 78.9 |
| 0°-90° | 5769.6 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 5769.6 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 45° | 90° | 135° | 180° | Flux |
|-----|------|------|------|------|------|------|
| 0° | 1863 | 1863 | 1863 | 1863 | 1863 | |
| 5° | 2014 | 1955 | 1844 | 1756 | 1733 | 196 |
| 15° | 2282 | 2079 | 1749 | 1544 | 1512 | 651 |
| 25° | 2553 | 2128 | 1574 | 1342 | 1324 | 1182 |
| 35° | 2659 | 2090 | 1344 | 1129 | 1133 | 1658 |
| 45° | 2393 | 1910 | 1085 | 909 | 963 | 1835 |
| 55° | 1770 | 1572 | 816 | 691 | 795 | 1579 |
| 65° | 1075 | 1107 | 543 | 468 | 557 | 1072 |
| 75° | 547 | 580 | 277 | 240 | 270 | 581 |
| 85° | 136 | 133 | 57 | 53 | 52 | 160 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P

CATALOG NUMBER: 4APN-32-34L950-UNV-ASY

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 90° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1862.7 | 1862.7 | 1862.7 | 1862.7 | 1862.7 | 1862.7 | 1862.7 | 1862.7 | 1862.7 | 1862.7 | 1862.7 |
| 2.5° | 1937.8 | 1933.9 | 1929.3 | 1927.8 | 1920.9 | 1911.7 | 1903.3 | 1903.3 | 1893.3 | 1869.6 | 1852.8 |
| 5° | 2013.5 | 2007.4 | 1995.9 | 1986.8 | 1972.2 | 1954.6 | 1937.0 | 1926.3 | 1902.5 | 1866.5 | 1844.3 |
| 7.5° | 2083.2 | 2075.6 | 2061.0 | 2043.4 | 2019.7 | 1993.6 | 1964.5 | 1941.6 | 1905.6 | 1857.4 | 1829.0 |
| 10° | 2144.5 | 2137.6 | 2120.0 | 2098.5 | 2064.8 | 2028.1 | 1985.2 | 1950.8 | 1901.8 | 1842.1 | 1809.1 |
| 12.5° | 2211.8 | 2204.9 | 2180.4 | 2151.4 | 2105.4 | 2056.4 | 1999.8 | 1952.3 | 1891.8 | 1819.8 | 1782.3 |
| 15° | 2281.5 | 2272.3 | 2244.8 | 2205.7 | 2144.5 | 2078.6 | 2009.0 | 1947.7 | 1875.7 | 1793.1 | 1748.6 |
| 17.5° | 2350.4 | 2341.2 | 2306.8 | 2257.0 | 2180.4 | 2098.5 | 2012.8 | 1937.0 | 1852.8 | 1760.1 | 1711.9 |
| 20° | 2420.1 | 2410.9 | 2367.3 | 2304.5 | 2211.8 | 2113.1 | 2012.0 | 1920.9 | 1825.2 | 1722.6 | 1671.3 |
| 22.5° | 2489.8 | 2479.0 | 2426.2 | 2349.6 | 2237.9 | 2123.0 | 2003.6 | 1898.7 | 1790.8 | 1679.7 | 1624.6 |
| 25° | 2553.3 | 2542.6 | 2484.4 | 2394.1 | 2265.4 | 2127.6 | 1989.0 | 1868.1 | 1752.5 | 1632.3 | 1574.1 |
| 27.5° | 2608.4 | 2595.4 | 2534.9 | 2435.4 | 2289.2 | 2129.2 | 1969.9 | 1833.6 | 1708.1 | 1581.0 | 1522.0 |
| 30° | 2646.7 | 2635.2 | 2570.9 | 2464.5 | 2302.9 | 2123.8 | 1945.4 | 1793.1 | 1656.8 | 1525.9 | 1464.6 |
| 32.5° | 2663.5 | 2653.6 | 2590.0 | 2478.3 | 2305.2 | 2110.0 | 1915.5 | 1747.9 | 1603.2 | 1467.7 | 1405.7 |
| 35° | 2659.0 | 2649.0 | 2588.5 | 2476.0 | 2298.4 | 2090.1 | 1878.0 | 1696.6 | 1545.8 | 1407.2 | 1344.4 |
| 37.5° | 2629.9 | 2618.4 | 2563.3 | 2455.3 | 2278.4 | 2061.0 | 1835.2 | 1640.7 | 1483.7 | 1345.2 | 1281.6 |
| 40° | 2574.7 | 2563.3 | 2515.8 | 2416.3 | 2244.8 | 2022.0 | 1786.2 | 1581.0 | 1420.2 | 1280.1 | 1217.3 |
| 42.5° | 2495.9 | 2483.6 | 2446.1 | 2355.0 | 2196.5 | 1970.7 | 1730.3 | 1517.4 | 1352.8 | 1217.3 | 1151.5 |
| 45° | 2393.3 | 2381.0 | 2355.8 | 2278.4 | 2133.7 | 1910.2 | 1666.7 | 1448.5 | 1282.4 | 1146.1 | 1084.9 |
| 47.5° | 2266.2 | 2255.5 | 2243.2 | 2183.5 | 2056.4 | 1840.5 | 1595.5 | 1375.0 | 1208.9 | 1079.5 | 1016.7 |
| 50° | 2118.4 | 2107.7 | 2111.5 | 2071.0 | 1966.8 | 1760.1 | 1517.4 | 1297.7 | 1133.1 | 1005.2 | 948.6 |
| 52.5° | 1950.8 | 1942.3 | 1960.7 | 1943.1 | 1862.7 | 1670.6 | 1434.0 | 1218.1 | 1055.8 | 934.8 | 880.4 |
| 55° | 1770.1 | 1760.9 | 1796.1 | 1801.5 | 1746.3 | 1571.8 | 1339.0 | 1135.4 | 977.7 | 865.9 | 816.1 |
| 57.5° | 1584.0 | 1576.4 | 1621.6 | 1646.8 | 1619.3 | 1465.4 | 1243.3 | 1050.4 | 897.3 | 793.9 | 744.2 |
| 60° | 1402.6 | 1396.5 | 1443.9 | 1485.3 | 1482.2 | 1352.8 | 1143.8 | 958.5 | 816.9 | 721.2 | 679.1 |
| 62.5° | 1231.9 | 1225.0 | 1272.4 | 1321.4 | 1339.0 | 1232.6 | 1045.1 | 868.2 | 736.5 | 648.5 | 611.0 |
| 65° | 1074.9 | 1068.0 | 1108.6 | 1159.1 | 1191.3 | 1107.1 | 938.6 | 774.8 | 655.4 | 575.0 | 542.8 |
| 67.5° | 931.0 | 931.0 | 956.2 | 1002.9 | 1042.0 | 978.4 | 829.9 | 686.0 | 571.9 | 506.8 | 474.7 |
| 70° | 796.2 | 795.5 | 813.8 | 846.8 | 891.9 | 840.6 | 719.7 | 592.6 | 493.1 | 435.6 | 407.3 |
| 72.5° | 668.4 | 673.7 | 680.6 | 705.9 | 753.4 | 709.0 | 610.2 | 500.7 | 415.7 | 365.2 | 341.5 |
| 75° | 546.6 | 545.9 | 555.8 | 578.0 | 612.5 | 579.6 | 500.7 | 411.1 | 339.2 | 297.8 | 277.1 |
| 77.5° | 430.3 | 429.5 | 437.9 | 450.9 | 480.0 | 454.0 | 395.1 | 328.4 | 264.1 | 229.7 | 215.1 |
| 80° | 320.8 | 320.8 | 328.4 | 335.3 | 356.8 | 336.1 | 294.8 | 245.8 | 193.7 | 166.9 | 155.4 |
| 82.5° | 222.8 | 227.4 | 224.3 | 233.5 | 245.8 | 228.2 | 202.1 | 168.4 | 128.6 | 110.2 | 102.6 |
| 85° | 135.5 | 139.3 | 135.5 | 143.2 | 148.5 | 133.2 | 120.2 | 100.3 | 74.3 | 62.0 | 56.7 |
| 87.5° | 69.7 | 68.9 | 68.1 | 72.0 | 73.5 | 64.3 | 56.7 | 48.2 | 32.9 | 25.3 | 21.4 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



TEST NUMBER: P

CATALOG NUMBER: 4APN-32-34L950-UNV-ASY

CANDELA DISTRIBUTION (continued):

| | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1862.7 | 1862.7 | 1862.7 | 1862.7 | 1862.7 | 1862.7 | 1862.7 | 1862.7 | 1862.7 | 1862.7 |
| 2.5° | 1842.8 | 1847.4 | 1840.5 | 1815.3 | 1805.3 | 1794.6 | 1790.0 | 1785.4 | 1793.8 | 1791.5 |
| 5° | 1827.5 | 1822.1 | 1804.5 | 1772.4 | 1755.5 | 1737.9 | 1729.5 | 1724.1 | 1735.6 | 1733.3 |
| 7.5° | 1806.8 | 1791.5 | 1765.5 | 1726.4 | 1705.0 | 1681.3 | 1669.8 | 1662.9 | 1670.6 | 1669.0 |
| 10° | 1780.8 | 1755.5 | 1723.4 | 1676.7 | 1651.4 | 1625.4 | 1612.4 | 1602.4 | 1608.5 | 1607.8 |
| 12.5° | 1747.9 | 1715.0 | 1675.9 | 1623.1 | 1597.1 | 1570.3 | 1558.8 | 1551.9 | 1559.5 | 1557.2 |
| 15° | 1711.1 | 1671.3 | 1626.1 | 1572.6 | 1544.2 | 1519.7 | 1511.3 | 1505.9 | 1512.1 | 1512.1 |
| 17.5° | 1670.6 | 1623.9 | 1574.1 | 1519.7 | 1492.9 | 1473.8 | 1465.4 | 1461.5 | 1464.6 | 1469.2 |
| 20° | 1625.4 | 1573.3 | 1519.7 | 1466.9 | 1443.9 | 1424.0 | 1416.4 | 1412.5 | 1419.4 | 1416.4 |
| 22.5° | 1575.6 | 1520.5 | 1464.6 | 1414.8 | 1394.2 | 1374.3 | 1366.6 | 1364.3 | 1372.0 | 1368.9 |
| 25° | 1522.8 | 1463.1 | 1408.0 | 1362.8 | 1342.1 | 1325.3 | 1318.4 | 1316.1 | 1319.9 | 1323.7 |
| 27.5° | 1473.0 | 1405.7 | 1351.3 | 1310.7 | 1292.3 | 1276.3 | 1270.1 | 1266.3 | 1269.4 | 1274.0 |
| 30° | 1412.5 | 1347.5 | 1293.9 | 1256.4 | 1238.8 | 1223.4 | 1218.8 | 1215.8 | 1220.4 | 1224.2 |
| 32.5° | 1355.9 | 1290.0 | 1236.5 | 1199.7 | 1184.4 | 1169.8 | 1169.1 | 1167.6 | 1172.9 | 1177.5 |
| 35° | 1294.6 | 1230.3 | 1178.3 | 1143.8 | 1129.3 | 1117.0 | 1119.3 | 1121.6 | 1127.7 | 1133.1 |
| 37.5° | 1232.6 | 1169.8 | 1120.1 | 1088.7 | 1074.9 | 1065.0 | 1071.8 | 1074.9 | 1083.3 | 1088.7 |
| 40° | 1169.8 | 1107.1 | 1061.1 | 1032.8 | 1019.0 | 1014.4 | 1024.4 | 1031.3 | 1041.2 | 1045.8 |
| 42.5° | 1105.5 | 1047.4 | 1001.4 | 975.4 | 963.9 | 963.9 | 976.9 | 987.6 | 999.1 | 1003.7 |
| 45° | 1041.2 | 984.6 | 940.9 | 917.2 | 908.8 | 914.9 | 930.2 | 944.0 | 958.5 | 963.1 |
| 47.5° | 976.1 | 921.0 | 881.2 | 859.8 | 855.2 | 864.4 | 883.5 | 901.9 | 918.7 | 924.9 |
| 50° | 911.1 | 861.3 | 821.5 | 801.6 | 801.6 | 813.1 | 837.6 | 860.5 | 878.9 | 885.0 |
| 52.5° | 846.0 | 798.5 | 758.0 | 743.4 | 746.5 | 762.5 | 790.9 | 814.6 | 835.3 | 841.4 |
| 55° | 780.2 | 733.5 | 698.2 | 686.0 | 691.3 | 711.2 | 740.3 | 767.9 | 787.8 | 794.7 |
| 57.5° | 715.1 | 670.7 | 638.5 | 628.6 | 636.2 | 658.4 | 692.1 | 715.8 | 736.5 | 742.6 |
| 60° | 649.2 | 604.1 | 578.8 | 571.1 | 581.1 | 604.1 | 638.5 | 660.7 | 679.9 | 686.0 |
| 62.5° | 584.2 | 542.0 | 519.8 | 513.0 | 524.4 | 548.9 | 582.6 | 602.5 | 617.1 | 623.2 |
| 65° | 518.3 | 480.8 | 460.1 | 455.5 | 467.8 | 491.5 | 523.7 | 540.5 | 551.2 | 557.4 |
| 67.5° | 453.2 | 421.1 | 401.9 | 398.1 | 411.1 | 432.6 | 462.4 | 471.6 | 481.6 | 487.7 |
| 70° | 388.9 | 359.8 | 343.8 | 341.5 | 352.9 | 373.6 | 398.9 | 403.5 | 408.8 | 414.2 |
| 72.5° | 325.4 | 302.4 | 286.3 | 285.6 | 296.3 | 313.1 | 333.8 | 334.6 | 336.1 | 341.5 |
| 75° | 264.1 | 243.5 | 231.2 | 233.5 | 239.6 | 253.4 | 269.5 | 264.9 | 265.7 | 269.5 |
| 77.5° | 205.2 | 188.3 | 179.9 | 181.4 | 186.0 | 196.0 | 206.7 | 201.4 | 198.3 | 202.1 |
| 80° | 147.8 | 133.2 | 130.2 | 130.9 | 134.0 | 140.9 | 147.0 | 142.4 | 136.3 | 139.3 |
| 82.5° | 97.2 | 88.0 | 86.5 | 87.3 | 89.6 | 93.4 | 94.9 | 88.0 | 86.5 | 88.8 |
| 85° | 53.6 | 49.8 | 49.8 | 52.1 | 52.8 | 53.6 | 53.6 | 49.8 | 50.5 | 52.1 |
| 87.5° | 21.4 | 21.4 | 23.7 | 26.0 | 24.5 | 21.4 | 18.4 | 12.2 | 12.2 | 14.5 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)