

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-X-37L840-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-X-37L840-UNV-ASY
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture EXAM Light w/
ASYMMETRIC Lens
Light Source: 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

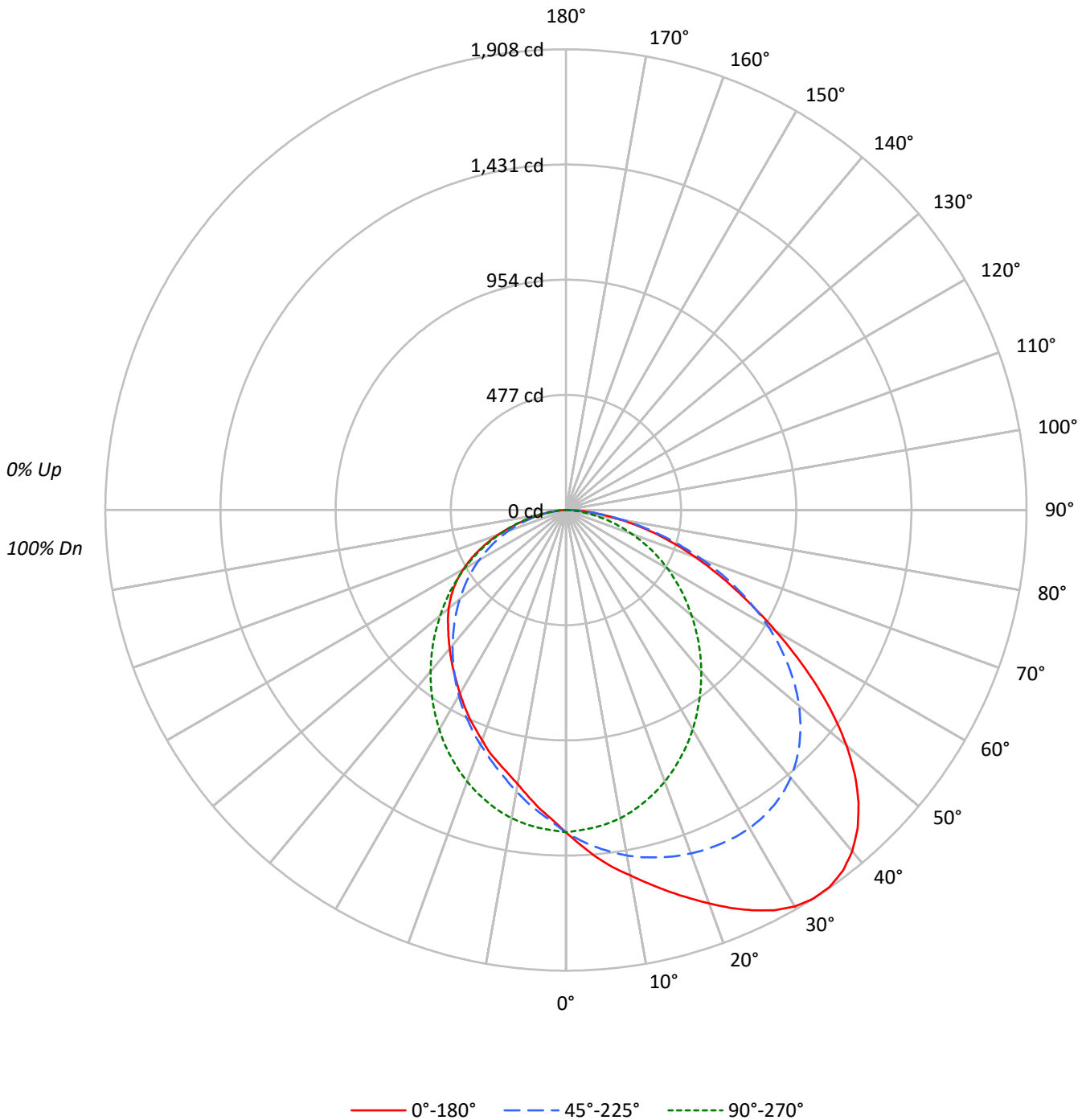
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4133.4 lumens
Efficiency: N/A
Efficacy: 101.3 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): 40.8
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-X-37L840-UNV-ASY

Luminous Intensity Polar Plot





TEST NUMBER: P
 CATALOG NUMBER: 4APN-X-37L840-UNV-ASY

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 | 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° | 12848 | 12848 | 12848 |
| 5° | 13940 | 12769 | 12001 |
| 10° | 15019 | 12670 | 11260 |
| 15° | 16291 | 12486 | 10797 |
| 20° | 17763 | 12267 | 10396 |
| 25° | 19431 | 11979 | 10073 |
| 30° | 21078 | 11665 | 9749 |
| 35° | 22388 | 11319 | 9541 |
| 40° | 23182 | 10960 | 9416 |
| 45° | 23344 | 10582 | 9394 |
| 50° | 22731 | 10179 | 9496 |
| 55° | 21285 | 9814 | 9556 |
| 60° | 19347 | 9367 | 9462 |
| 65° | 17543 | 8859 | 9096 |
| 70° | 16056 | 8214 | 8352 |
| 75° | 14566 | 7387 | 7183 |
| 80° | 12740 | 6171 | 5533 |
| 85° | 10726 | 4485 | 4120 |



TEST NUMBER: P
 CATALOG NUMBER: 4APN-X-37L840-UNV-ASY

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 126.7 | 3.1 |
| 10°-20° | 368.6 | 8.9 |
| 20°-30° | 577.5 | 14.0 |
| 30°-40° | 723.9 | 17.5 |
| 40°-50° | 770.7 | 18.6 |
| 50°-60° | 695.7 | 16.8 |
| 60°-70° | 515.0 | 12.5 |
| 70°-80° | 282.6 | 6.8 |
| 80°-90° | 72.6 | 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° | 1072.8 | 26.0 |
| 0°-40° | 1796.7 | 43.5 |
| 0°-60° | 3263.2 | 78.9 |
| 0°-90° | 4133.4 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 4133.4 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 45° | 90° | 135° | 180° | Flux |
|-----|------|------|------|------|------|------|
| 0° | 1334 | 1334 | 1334 | 1334 | 1334 | |
| 5° | 1442 | 1400 | 1321 | 1258 | 1242 | 140 |
| 15° | 1634 | 1489 | 1253 | 1106 | 1083 | 466 |
| 25° | 1829 | 1524 | 1128 | 962 | 948 | 847 |
| 35° | 1905 | 1497 | 963 | 809 | 812 | 1188 |
| 45° | 1715 | 1368 | 777 | 651 | 690 | 1315 |
| 55° | 1268 | 1126 | 585 | 495 | 569 | 1131 |
| 65° | 770 | 793 | 389 | 335 | 399 | 768 |
| 75° | 392 | 415 | 199 | 172 | 193 | 416 |
| 85° | 97 | 95 | 41 | 38 | 37 | 115 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P
 CATALOG NUMBER: 4APN-X-37L840-UNV-ASY

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 90° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1334.5 | 1334.5 | 1334.5 | 1334.5 | 1334.5 | 1334.5 | 1334.5 | 1334.5 | 1334.5 | 1334.5 | 1334.5 |
| 2.5° | 1388.2 | 1385.5 | 1382.2 | 1381.1 | 1376.1 | 1369.6 | 1363.5 | 1363.5 | 1356.4 | 1339.4 | 1327.3 |
| 5° | 1442.5 | 1438.1 | 1429.9 | 1423.3 | 1412.9 | 1400.3 | 1387.7 | 1380.0 | 1363.0 | 1337.2 | 1321.3 |
| 7.5° | 1492.4 | 1486.9 | 1476.5 | 1463.9 | 1446.9 | 1428.3 | 1407.4 | 1391.0 | 1365.2 | 1330.6 | 1310.3 |
| 10° | 1536.3 | 1531.4 | 1518.8 | 1503.4 | 1479.3 | 1452.9 | 1422.2 | 1397.5 | 1362.4 | 1319.7 | 1296.1 |
| 12.5° | 1584.6 | 1579.6 | 1562.1 | 1541.2 | 1508.3 | 1473.2 | 1432.6 | 1398.6 | 1355.3 | 1303.7 | 1276.9 |
| 15° | 1634.5 | 1627.9 | 1608.2 | 1580.2 | 1536.3 | 1489.1 | 1439.2 | 1395.3 | 1343.8 | 1284.5 | 1252.7 |
| 17.5° | 1683.8 | 1677.3 | 1652.6 | 1616.9 | 1562.1 | 1503.4 | 1442.0 | 1387.7 | 1327.3 | 1261.0 | 1226.4 |
| 20° | 1733.8 | 1727.2 | 1695.9 | 1650.9 | 1584.6 | 1513.8 | 1441.4 | 1376.1 | 1307.6 | 1234.1 | 1197.3 |
| 22.5° | 1783.7 | 1776.0 | 1738.1 | 1683.3 | 1603.2 | 1520.9 | 1435.4 | 1360.2 | 1282.9 | 1203.4 | 1163.9 |
| 25° | 1829.2 | 1821.5 | 1779.8 | 1715.1 | 1623.0 | 1524.2 | 1425.0 | 1338.3 | 1255.5 | 1169.4 | 1127.7 |
| 27.5° | 1868.7 | 1859.4 | 1816.0 | 1744.7 | 1640.0 | 1525.3 | 1411.2 | 1313.6 | 1223.7 | 1132.6 | 1090.4 |
| 30° | 1896.1 | 1887.9 | 1841.8 | 1765.6 | 1649.8 | 1521.5 | 1393.7 | 1284.5 | 1186.9 | 1093.1 | 1049.3 |
| 32.5° | 1908.2 | 1901.0 | 1855.5 | 1775.4 | 1651.5 | 1511.6 | 1372.3 | 1252.2 | 1148.5 | 1051.4 | 1007.0 |
| 35° | 1904.9 | 1897.8 | 1854.4 | 1773.8 | 1646.5 | 1497.4 | 1345.4 | 1215.4 | 1107.4 | 1008.1 | 963.1 |
| 37.5° | 1884.0 | 1875.8 | 1836.3 | 1759.0 | 1632.3 | 1476.5 | 1314.7 | 1175.4 | 1063.0 | 963.7 | 918.2 |
| 40° | 1844.6 | 1836.3 | 1802.3 | 1731.0 | 1608.2 | 1448.5 | 1279.6 | 1132.6 | 1017.4 | 917.1 | 872.1 |
| 42.5° | 1788.1 | 1779.3 | 1752.4 | 1687.1 | 1573.6 | 1411.8 | 1239.6 | 1087.1 | 969.2 | 872.1 | 824.9 |
| 45° | 1714.6 | 1705.8 | 1687.7 | 1632.3 | 1528.6 | 1368.5 | 1194.0 | 1037.7 | 918.7 | 821.1 | 777.2 |
| 47.5° | 1623.5 | 1615.8 | 1607.1 | 1564.3 | 1473.2 | 1318.6 | 1143.0 | 985.1 | 866.1 | 773.4 | 728.4 |
| 50° | 1517.7 | 1510.0 | 1512.7 | 1483.6 | 1409.1 | 1261.0 | 1087.1 | 929.7 | 811.8 | 720.2 | 679.6 |
| 52.5° | 1397.5 | 1391.5 | 1404.7 | 1392.1 | 1334.5 | 1196.8 | 1027.3 | 872.6 | 756.4 | 669.7 | 630.8 |
| 55° | 1268.1 | 1261.5 | 1286.7 | 1290.6 | 1251.1 | 1126.0 | 959.3 | 813.4 | 700.4 | 620.3 | 584.7 |
| 57.5° | 1134.8 | 1129.3 | 1161.7 | 1179.8 | 1160.0 | 1049.8 | 890.7 | 752.5 | 642.8 | 568.8 | 533.1 |
| 60° | 1004.8 | 1000.4 | 1034.4 | 1064.1 | 1061.9 | 969.2 | 819.4 | 686.7 | 585.2 | 516.7 | 486.5 |
| 62.5° | 882.5 | 877.6 | 911.6 | 946.7 | 959.3 | 883.1 | 748.7 | 622.0 | 527.6 | 464.6 | 437.7 |
| 65° | 770.1 | 765.1 | 794.2 | 830.4 | 853.4 | 793.1 | 672.4 | 555.1 | 469.5 | 411.9 | 388.9 |
| 67.5° | 667.0 | 667.0 | 685.1 | 718.5 | 746.5 | 701.0 | 594.6 | 491.4 | 409.7 | 363.1 | 340.1 |
| 70° | 570.4 | 569.9 | 583.0 | 606.6 | 639.0 | 602.2 | 515.6 | 424.5 | 353.2 | 312.1 | 291.8 |
| 72.5° | 478.8 | 482.7 | 487.6 | 505.7 | 539.7 | 507.9 | 437.1 | 358.7 | 297.8 | 261.6 | 244.6 |
| 75° | 391.6 | 391.1 | 398.2 | 414.1 | 438.8 | 415.2 | 358.7 | 294.5 | 243.0 | 213.4 | 198.6 |
| 77.5° | 308.2 | 307.7 | 313.7 | 323.1 | 343.9 | 325.3 | 283.0 | 235.3 | 189.2 | 164.5 | 154.1 |
| 80° | 229.8 | 229.8 | 235.3 | 240.2 | 255.6 | 240.8 | 211.2 | 176.1 | 138.8 | 119.6 | 111.3 |
| 82.5° | 159.6 | 162.9 | 160.7 | 167.3 | 176.1 | 163.4 | 144.8 | 120.7 | 92.1 | 79.0 | 73.5 |
| 85° | 97.1 | 99.8 | 97.1 | 102.6 | 106.4 | 95.4 | 86.1 | 71.9 | 53.2 | 44.4 | 40.6 |
| 87.5° | 49.9 | 49.4 | 48.8 | 51.6 | 52.7 | 46.1 | 40.6 | 34.6 | 23.6 | 18.1 | 15.4 |
| 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-X-37L840-UNV-ASY

CANDELA DISTRIBUTION (continued):

| | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1334.5 | 1334.5 | 1334.5 | 1334.5 | 1334.5 | 1334.5 | 1334.5 | 1334.5 | 1334.5 | 1334.5 |
| 2.5° | 1320.2 | 1323.5 | 1318.6 | 1300.5 | 1293.3 | 1285.6 | 1282.4 | 1279.1 | 1285.1 | 1283.5 |
| 5° | 1309.2 | 1305.4 | 1292.8 | 1269.7 | 1257.7 | 1245.1 | 1239.0 | 1235.2 | 1243.4 | 1241.8 |
| 7.5° | 1294.4 | 1283.5 | 1264.8 | 1236.8 | 1221.5 | 1204.5 | 1196.2 | 1191.3 | 1196.8 | 1195.7 |
| 10° | 1275.8 | 1257.7 | 1234.6 | 1201.2 | 1183.1 | 1164.4 | 1155.1 | 1148.0 | 1152.4 | 1151.8 |
| 12.5° | 1252.2 | 1228.6 | 1200.6 | 1162.8 | 1144.1 | 1124.9 | 1116.7 | 1111.8 | 1117.3 | 1115.6 |
| 15° | 1225.9 | 1197.3 | 1165.0 | 1126.6 | 1106.3 | 1088.7 | 1082.7 | 1078.9 | 1083.3 | 1083.3 |
| 17.5° | 1196.8 | 1163.3 | 1127.7 | 1088.7 | 1069.5 | 1055.8 | 1049.8 | 1047.1 | 1049.3 | 1052.5 |
| 20° | 1164.4 | 1127.1 | 1088.7 | 1050.9 | 1034.4 | 1020.2 | 1014.7 | 1012.0 | 1016.9 | 1014.7 |
| 22.5° | 1128.8 | 1089.3 | 1049.3 | 1013.6 | 998.8 | 984.5 | 979.0 | 977.4 | 982.9 | 980.7 |
| 25° | 1090.9 | 1048.2 | 1008.7 | 976.3 | 961.5 | 949.4 | 944.5 | 942.8 | 945.6 | 948.3 |
| 27.5° | 1055.3 | 1007.0 | 968.1 | 939.0 | 925.8 | 914.3 | 909.9 | 907.2 | 909.4 | 912.7 |
| 30° | 1012.0 | 965.3 | 926.9 | 900.1 | 887.4 | 876.5 | 873.2 | 871.0 | 874.3 | 877.0 |
| 32.5° | 971.4 | 924.2 | 885.8 | 859.5 | 848.5 | 838.1 | 837.5 | 836.4 | 840.3 | 843.6 |
| 35° | 927.5 | 881.4 | 844.1 | 819.4 | 809.0 | 800.2 | 801.9 | 803.5 | 807.9 | 811.8 |
| 37.5° | 883.1 | 838.1 | 802.4 | 779.9 | 770.1 | 762.9 | 767.9 | 770.1 | 776.1 | 779.9 |
| 40° | 838.1 | 793.1 | 760.2 | 739.9 | 730.0 | 726.7 | 733.9 | 738.8 | 745.9 | 749.2 |
| 42.5° | 792.0 | 750.3 | 717.4 | 698.8 | 690.5 | 690.5 | 699.9 | 707.5 | 715.8 | 719.1 |
| 45° | 745.9 | 705.4 | 674.1 | 657.1 | 651.1 | 655.4 | 666.4 | 676.3 | 686.7 | 690.0 |
| 47.5° | 699.3 | 659.8 | 631.3 | 615.9 | 612.7 | 619.2 | 633.0 | 646.1 | 658.2 | 662.6 |
| 50° | 652.7 | 617.0 | 588.5 | 574.3 | 574.3 | 582.5 | 600.0 | 616.5 | 629.7 | 634.0 |
| 52.5° | 606.1 | 572.1 | 543.0 | 532.6 | 534.8 | 546.3 | 566.6 | 583.6 | 598.4 | 602.8 |
| 55° | 558.9 | 525.4 | 500.2 | 491.4 | 495.3 | 509.5 | 530.4 | 550.1 | 564.4 | 569.3 |
| 57.5° | 512.3 | 480.5 | 457.4 | 450.3 | 455.8 | 471.7 | 495.8 | 512.8 | 527.6 | 532.0 |
| 60° | 465.1 | 432.8 | 414.7 | 409.2 | 416.3 | 432.8 | 457.4 | 473.3 | 487.1 | 491.4 |
| 62.5° | 418.5 | 388.3 | 372.4 | 367.5 | 375.7 | 393.3 | 417.4 | 431.7 | 442.1 | 446.5 |
| 65° | 371.3 | 344.4 | 329.6 | 326.3 | 335.1 | 352.1 | 375.2 | 387.2 | 394.9 | 399.3 |
| 67.5° | 324.7 | 301.7 | 288.0 | 285.2 | 294.5 | 309.9 | 331.3 | 337.9 | 345.0 | 349.4 |
| 70° | 278.6 | 257.8 | 246.3 | 244.6 | 252.9 | 267.7 | 285.8 | 289.1 | 292.9 | 296.7 |
| 72.5° | 233.1 | 216.7 | 205.1 | 204.6 | 212.3 | 224.3 | 239.1 | 239.7 | 240.8 | 244.6 |
| 75° | 189.2 | 174.4 | 165.6 | 167.3 | 171.7 | 181.5 | 193.1 | 189.8 | 190.3 | 193.1 |
| 77.5° | 147.0 | 134.9 | 128.9 | 130.0 | 133.3 | 140.4 | 148.1 | 144.3 | 142.1 | 144.8 |
| 80° | 105.9 | 95.4 | 93.2 | 93.8 | 96.0 | 100.9 | 105.3 | 102.0 | 97.6 | 99.8 |
| 82.5° | 69.7 | 63.1 | 62.0 | 62.5 | 64.2 | 66.9 | 68.0 | 63.1 | 62.0 | 63.6 |
| 85° | 38.4 | 35.7 | 35.7 | 37.3 | 37.8 | 38.4 | 38.4 | 35.7 | 36.2 | 37.3 |
| 87.5° | 15.4 | 15.4 | 17.0 | 18.6 | 17.6 | 15.4 | 13.2 | 8.8 | 8.8 | 10.4 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)