

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-35-37L835-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-35-37L835-UNV-ASY  
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient and Exam Light  
w/ ASYMMETRIC Lens  
Light Source: 3500K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

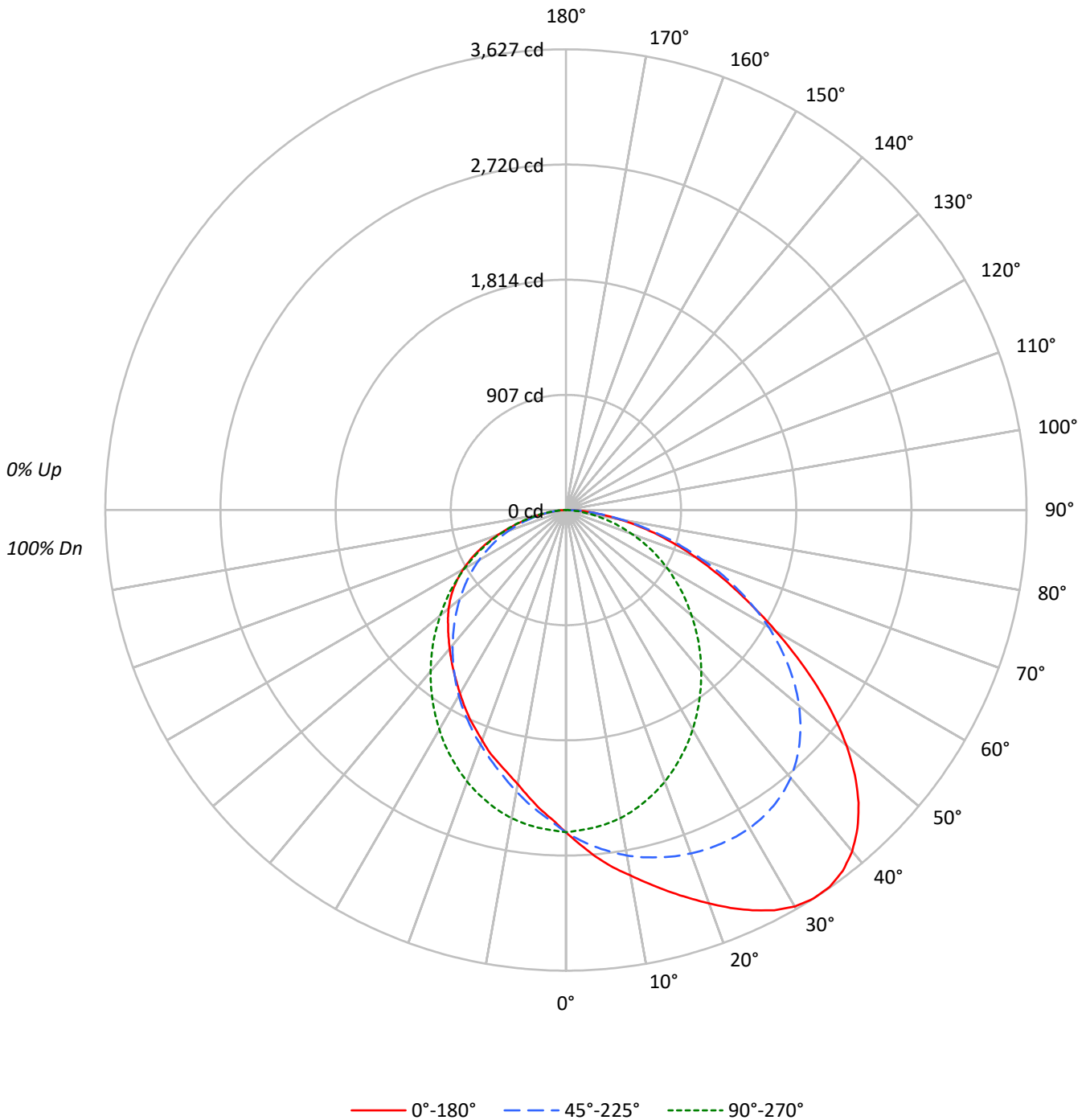
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7857.4 lumens  
Efficiency: N/A  
Efficacy: 97.0 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): 81  
Input Voltage (V): 120  
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: 4APN-35-37L835-UNV-ASY

### 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 | 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°  | 24423 | 24423 | 24423 |
| 5°  | 26501 | 24273 | 22813 |
| 10° | 28550 | 24086 | 21405 |
| 15° | 30968 | 23735 | 20524 |
| 20° | 33766 | 23319 | 19762 |
| 25° | 36937 | 22772 | 19149 |
| 30° | 40069 | 22173 | 18534 |
| 35° | 42558 | 21518 | 18136 |
| 40° | 44067 | 20835 | 17900 |
| 45° | 44376 | 20115 | 17859 |
| 50° | 43210 | 19348 | 18052 |
| 55° | 40461 | 18656 | 18166 |
| 60° | 36778 | 17807 | 17988 |
| 65° | 33348 | 16839 | 17290 |
| 70° | 30524 | 15614 | 15879 |
| 75° | 27693 | 14038 | 13651 |
| 80° | 24222 | 11737 | 10523 |
| 85° | 20380 | 8528  | 7832  |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 240.9  | 3.1       |
| 10°-20°   | 700.7  | 8.9       |
| 20°-30°   | 1097.7 | 14.0      |
| 30°-40°   | 1376.2 | 17.5      |
| 40°-50°   | 1465.1 | 18.6      |
| 50°-60°   | 1322.6 | 16.8      |
| 60°-70°   | 979.1  | 12.5      |
| 70°-80°   | 537.2  | 6.8       |
| 80°-90°   | 137.9  | 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°    | 2039.3 | 26.0      |
| 0°-40°    | 3415.5 | 43.5      |
| 0°-60°    | 6203.2 | 78.9      |
| 0°-90°    | 7857.4 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 7857.4 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 45°  | 90°  | 135° | 180° | Flux |
|-----|------|------|------|------|------|------|
| 0°  | 2537 | 2537 | 2537 | 2537 | 2537 |      |
| 5°  | 2742 | 2662 | 2512 | 2391 | 2361 | 267  |
| 15° | 3107 | 2831 | 2381 | 2103 | 2059 | 886  |
| 25° | 3477 | 2898 | 2144 | 1828 | 1803 | 1609 |
| 35° | 3621 | 2846 | 1831 | 1538 | 1543 | 2258 |
| 45° | 3259 | 2601 | 1477 | 1238 | 1312 | 2499 |
| 55° | 2411 | 2141 | 1112 | 942  | 1082 | 2150 |
| 65° | 1464 | 1508 | 739  | 637  | 759  | 1461 |
| 75° | 744  | 789  | 377  | 326  | 367  | 791  |
| 85° | 184  | 181  | 77   | 72   | 71   | 218  |
| 90° | 0    | 0    | 0    | 0    | 0    |      |



TEST NUMBER: P

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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 65°    | 75°    | 85°    | 90°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 2536.8 | 2536.8 | 2536.8 | 2536.8 | 2536.8 | 2536.8 | 2536.8 | 2536.8 | 2536.8 | 2536.8 | 2536.8 |
| 2.5°  | 2638.9 | 2633.7 | 2627.5 | 2625.4 | 2616.0 | 2603.5 | 2592.0 | 2592.0 | 2578.5 | 2546.1 | 2523.2 |
| 5°    | 2742.2 | 2733.8 | 2718.2 | 2705.7 | 2685.9 | 2661.9 | 2637.9 | 2623.3 | 2591.0 | 2542.0 | 2511.7 |
| 7.5°  | 2837.0 | 2826.6 | 2806.8 | 2782.8 | 2750.5 | 2715.1 | 2675.4 | 2644.2 | 2595.1 | 2529.5 | 2490.9 |
| 10°   | 2920.5 | 2911.1 | 2887.1 | 2857.9 | 2812.0 | 2762.0 | 2703.6 | 2656.7 | 2589.9 | 2508.6 | 2463.8 |
| 12.5° | 3012.2 | 3002.8 | 2969.5 | 2929.8 | 2867.3 | 2800.6 | 2723.4 | 2658.8 | 2576.4 | 2478.4 | 2427.3 |
| 15°   | 3107.1 | 3094.6 | 3057.0 | 3003.9 | 2920.5 | 2830.8 | 2735.9 | 2652.5 | 2554.5 | 2441.9 | 2381.4 |
| 17.5° | 3200.9 | 3188.4 | 3141.5 | 3073.7 | 2969.5 | 2857.9 | 2741.1 | 2637.9 | 2523.2 | 2397.0 | 2331.4 |
| 20°   | 3295.8 | 3283.3 | 3223.9 | 3138.4 | 3012.2 | 2877.7 | 2740.1 | 2616.0 | 2485.7 | 2346.0 | 2276.1 |
| 22.5° | 3390.7 | 3376.1 | 3304.1 | 3199.9 | 3047.7 | 2891.3 | 2728.6 | 2585.8 | 2438.8 | 2287.6 | 2212.5 |
| 25°   | 3477.2 | 3462.6 | 3383.4 | 3260.4 | 3085.2 | 2897.5 | 2708.8 | 2544.1 | 2386.6 | 2222.9 | 2143.7 |
| 27.5° | 3552.3 | 3534.6 | 3452.2 | 3316.7 | 3117.5 | 2899.6 | 2682.7 | 2497.1 | 2326.1 | 2153.1 | 2072.8 |
| 30°   | 3604.4 | 3588.8 | 3501.2 | 3356.3 | 3136.3 | 2892.3 | 2649.4 | 2441.9 | 2256.3 | 2078.0 | 1994.6 |
| 32.5° | 3627.4 | 3613.8 | 3527.3 | 3375.0 | 3139.4 | 2873.5 | 2608.7 | 2380.4 | 2183.3 | 1998.8 | 1914.3 |
| 35°   | 3621.1 | 3607.6 | 3525.2 | 3371.9 | 3130.0 | 2846.4 | 2557.6 | 2310.5 | 2105.1 | 1916.4 | 1830.9 |
| 37.5° | 3581.5 | 3565.9 | 3490.8 | 3343.8 | 3102.9 | 2806.8 | 2499.2 | 2234.4 | 2020.7 | 1831.9 | 1745.4 |
| 40°   | 3506.4 | 3490.8 | 3426.1 | 3290.6 | 3057.0 | 2753.6 | 2432.5 | 2153.1 | 1934.1 | 1743.3 | 1657.8 |
| 42.5° | 3399.0 | 3382.3 | 3331.3 | 3207.2 | 2991.4 | 2683.8 | 2356.4 | 2066.5 | 1842.4 | 1657.8 | 1568.1 |
| 45°   | 3259.3 | 3242.6 | 3208.2 | 3102.9 | 2905.9 | 2601.4 | 2269.8 | 1972.7 | 1746.4 | 1560.8 | 1477.4 |
| 47.5° | 3086.2 | 3071.6 | 3055.0 | 2973.6 | 2800.6 | 2506.5 | 2172.9 | 1872.6 | 1646.3 | 1470.1 | 1384.6 |
| 50°   | 2885.0 | 2870.4 | 2875.6 | 2820.4 | 2678.6 | 2397.0 | 2066.5 | 1767.3 | 1543.1 | 1369.0 | 1291.8 |
| 52.5° | 2656.7 | 2645.2 | 2670.2 | 2646.2 | 2536.8 | 2275.1 | 1952.9 | 1658.9 | 1437.8 | 1273.1 | 1199.0 |
| 55°   | 2410.6 | 2398.1 | 2446.1 | 2453.3 | 2378.3 | 2140.6 | 1823.6 | 1546.2 | 1331.5 | 1179.2 | 1111.5 |
| 57.5° | 2157.2 | 2146.8 | 2208.3 | 2242.7 | 2205.2 | 1995.6 | 1693.3 | 1430.5 | 1222.0 | 1081.2 | 1013.5 |
| 60°   | 1910.1 | 1901.8 | 1966.4 | 2022.7 | 2018.6 | 1842.4 | 1557.7 | 1305.4 | 1112.5 | 982.2  | 924.8  |
| 62.5° | 1677.6 | 1668.2 | 1732.9 | 1799.6 | 1823.6 | 1678.7 | 1423.2 | 1182.4 | 1003.0 | 883.1  | 832.0  |
| 65°   | 1463.9 | 1454.5 | 1509.8 | 1578.6 | 1622.4 | 1507.7 | 1278.3 | 1055.2 | 892.5  | 783.0  | 739.2  |
| 67.5° | 1267.9 | 1267.9 | 1302.3 | 1365.9 | 1419.0 | 1332.5 | 1130.2 | 934.2  | 778.9  | 690.2  | 646.4  |
| 70°   | 1084.4 | 1083.3 | 1108.3 | 1153.2 | 1214.7 | 1144.8 | 980.1  | 807.0  | 671.5  | 593.3  | 554.7  |
| 72.5° | 910.2  | 917.5  | 926.9  | 961.3  | 1026.0 | 965.5  | 831.0  | 681.9  | 566.2  | 497.3  | 465.0  |
| 75°   | 744.5  | 743.4  | 757.0  | 787.2  | 834.1  | 789.3  | 681.9  | 559.9  | 461.9  | 405.6  | 377.4  |
| 77.5° | 586.0  | 584.9  | 596.4  | 614.1  | 653.7  | 618.3  | 538.0  | 447.3  | 359.7  | 312.8  | 293.0  |
| 80°   | 436.9  | 436.9  | 447.3  | 456.7  | 485.9  | 457.7  | 401.4  | 334.7  | 263.8  | 227.3  | 211.7  |
| 82.5° | 303.4  | 309.7  | 305.5  | 318.0  | 334.7  | 310.7  | 275.3  | 229.4  | 175.2  | 150.1  | 139.7  |
| 85°   | 184.5  | 189.8  | 184.5  | 195.0  | 202.3  | 181.4  | 163.7  | 136.6  | 101.1  | 84.5   | 77.2   |
| 87.5° | 94.9   | 93.8   | 92.8   | 98.0   | 100.1  | 87.6   | 77.2   | 65.7   | 44.8   | 34.4   | 29.2   |
| 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

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**CANDELA DISTRIBUTION (continued):**

|       | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 2536.8 | 2536.8 | 2536.8 | 2536.8 | 2536.8 | 2536.8 | 2536.8 | 2536.8 | 2536.8 | 2536.8 |
| 2.5°  | 2509.7 | 2515.9 | 2506.5 | 2472.1 | 2458.6 | 2444.0 | 2437.7 | 2431.5 | 2442.9 | 2439.8 |
| 5°    | 2488.8 | 2481.5 | 2457.5 | 2413.7 | 2390.8 | 2366.8 | 2355.3 | 2348.0 | 2363.7 | 2360.6 |
| 7.5°  | 2460.6 | 2439.8 | 2404.3 | 2351.2 | 2322.0 | 2289.7 | 2274.0 | 2264.6 | 2275.1 | 2273.0 |
| 10°   | 2425.2 | 2390.8 | 2347.0 | 2283.4 | 2249.0 | 2213.5 | 2195.8 | 2182.3 | 2190.6 | 2189.6 |
| 12.5° | 2380.4 | 2335.5 | 2282.4 | 2210.4 | 2175.0 | 2138.5 | 2122.8 | 2113.4 | 2123.9 | 2120.7 |
| 15°   | 2330.3 | 2276.1 | 2214.6 | 2141.6 | 2103.0 | 2069.7 | 2058.2 | 2050.9 | 2059.2 | 2059.2 |
| 17.5° | 2275.1 | 2211.5 | 2143.7 | 2069.7 | 2033.2 | 2007.1 | 1995.6 | 1990.4 | 1994.6 | 2000.8 |
| 20°   | 2213.5 | 2142.6 | 2069.7 | 1997.7 | 1966.4 | 1939.3 | 1928.9 | 1923.7 | 1933.1 | 1928.9 |
| 22.5° | 2145.8 | 2070.7 | 1994.6 | 1926.8 | 1898.7 | 1871.6 | 1861.1 | 1858.0 | 1868.4 | 1864.3 |
| 25°   | 2073.8 | 1992.5 | 1917.4 | 1855.9 | 1827.8 | 1804.8 | 1795.4 | 1792.3 | 1797.5 | 1802.7 |
| 27.5° | 2006.1 | 1914.3 | 1840.3 | 1785.0 | 1760.0 | 1738.1 | 1729.8 | 1724.5 | 1728.7 | 1735.0 |
| 30°   | 1923.7 | 1835.1 | 1762.1 | 1711.0 | 1687.0 | 1666.2 | 1659.9 | 1655.7 | 1662.0 | 1667.2 |
| 32.5° | 1846.5 | 1756.9 | 1683.9 | 1633.8 | 1613.0 | 1593.2 | 1592.1 | 1590.0 | 1597.3 | 1603.6 |
| 35°   | 1763.1 | 1675.5 | 1604.6 | 1557.7 | 1537.9 | 1521.2 | 1524.4 | 1527.5 | 1535.8 | 1543.1 |
| 37.5° | 1678.7 | 1593.2 | 1525.4 | 1482.6 | 1463.9 | 1450.3 | 1459.7 | 1463.9 | 1475.3 | 1482.6 |
| 40°   | 1593.2 | 1507.7 | 1445.1 | 1406.5 | 1387.8 | 1381.5 | 1395.1 | 1404.4 | 1418.0 | 1424.3 |
| 42.5° | 1505.6 | 1426.3 | 1363.8 | 1328.3 | 1312.7 | 1312.7 | 1330.4 | 1345.0 | 1360.7 | 1366.9 |
| 45°   | 1418.0 | 1340.8 | 1281.4 | 1249.1 | 1237.6 | 1246.0 | 1266.8 | 1285.6 | 1305.4 | 1311.7 |
| 47.5° | 1329.4 | 1254.3 | 1200.1 | 1170.9 | 1164.6 | 1177.1 | 1203.2 | 1228.2 | 1251.2 | 1259.5 |
| 50°   | 1240.8 | 1173.0 | 1118.8 | 1091.7 | 1091.7 | 1107.3 | 1140.7 | 1171.9 | 1197.0 | 1205.3 |
| 52.5° | 1152.1 | 1087.5 | 1032.2 | 1012.4 | 1016.6 | 1038.5 | 1077.1 | 1109.4 | 1137.5 | 1145.9 |
| 55°   | 1062.5 | 998.9  | 950.9  | 934.2  | 941.5  | 968.6  | 1008.2 | 1045.8 | 1072.9 | 1082.3 |
| 57.5° | 973.8  | 913.4  | 869.6  | 856.0  | 866.4  | 896.7  | 942.6  | 974.9  | 1003.0 | 1011.4 |
| 60°   | 884.2  | 822.6  | 788.2  | 777.8  | 791.4  | 822.6  | 869.6  | 899.8  | 925.9  | 934.2  |
| 62.5° | 795.5  | 738.2  | 708.0  | 698.6  | 714.2  | 747.6  | 793.5  | 820.6  | 840.4  | 848.7  |
| 65°   | 705.9  | 654.8  | 626.6  | 620.4  | 637.1  | 669.4  | 713.2  | 736.1  | 750.7  | 759.0  |
| 67.5° | 617.2  | 573.5  | 547.4  | 542.2  | 559.9  | 589.1  | 629.8  | 642.3  | 655.8  | 664.2  |
| 70°   | 529.7  | 490.0  | 468.1  | 465.0  | 480.7  | 508.8  | 543.2  | 549.5  | 556.8  | 564.1  |
| 72.5° | 443.1  | 411.8  | 390.0  | 388.9  | 403.5  | 426.4  | 454.6  | 455.6  | 457.7  | 465.0  |
| 75°   | 359.7  | 331.6  | 314.9  | 318.0  | 326.3  | 345.1  | 367.0  | 360.8  | 361.8  | 367.0  |
| 77.5° | 279.4  | 256.5  | 245.0  | 247.1  | 253.4  | 266.9  | 281.5  | 274.2  | 270.0  | 275.3  |
| 80°   | 201.2  | 181.4  | 177.3  | 178.3  | 182.5  | 191.8  | 200.2  | 193.9  | 185.6  | 189.8  |
| 82.5° | 132.4  | 119.9  | 117.8  | 118.9  | 122.0  | 127.2  | 129.3  | 119.9  | 117.8  | 120.9  |
| 85°   | 73.0   | 67.8   | 67.8   | 70.9   | 71.9   | 73.0   | 73.0   | 67.8   | 68.8   | 70.9   |
| 87.5° | 29.2   | 29.2   | 32.3   | 35.5   | 33.4   | 29.2   | 25.0   | 16.7   | 16.7   | 19.8   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

(END OF REPORT)