

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: INVUE

Report Number: P367222

Luminaire Tested: **MSA-SA2A-760-U-SL3**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P367222
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-18)
Test Lab: INNOVATION CENTER
Issue Date: 12/2/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: MSA-SA2A-760-U-SL3
Description: MESA POST TOP DECORATIVE LUMINAIRE. (2) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III SPILL LIGHT ELIMINATOR OPTICS.
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7799 lumens
Efficiency: N/A
Efficacy: 118.2 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type III - Short
BUG Rating: B1 - U0 - G2

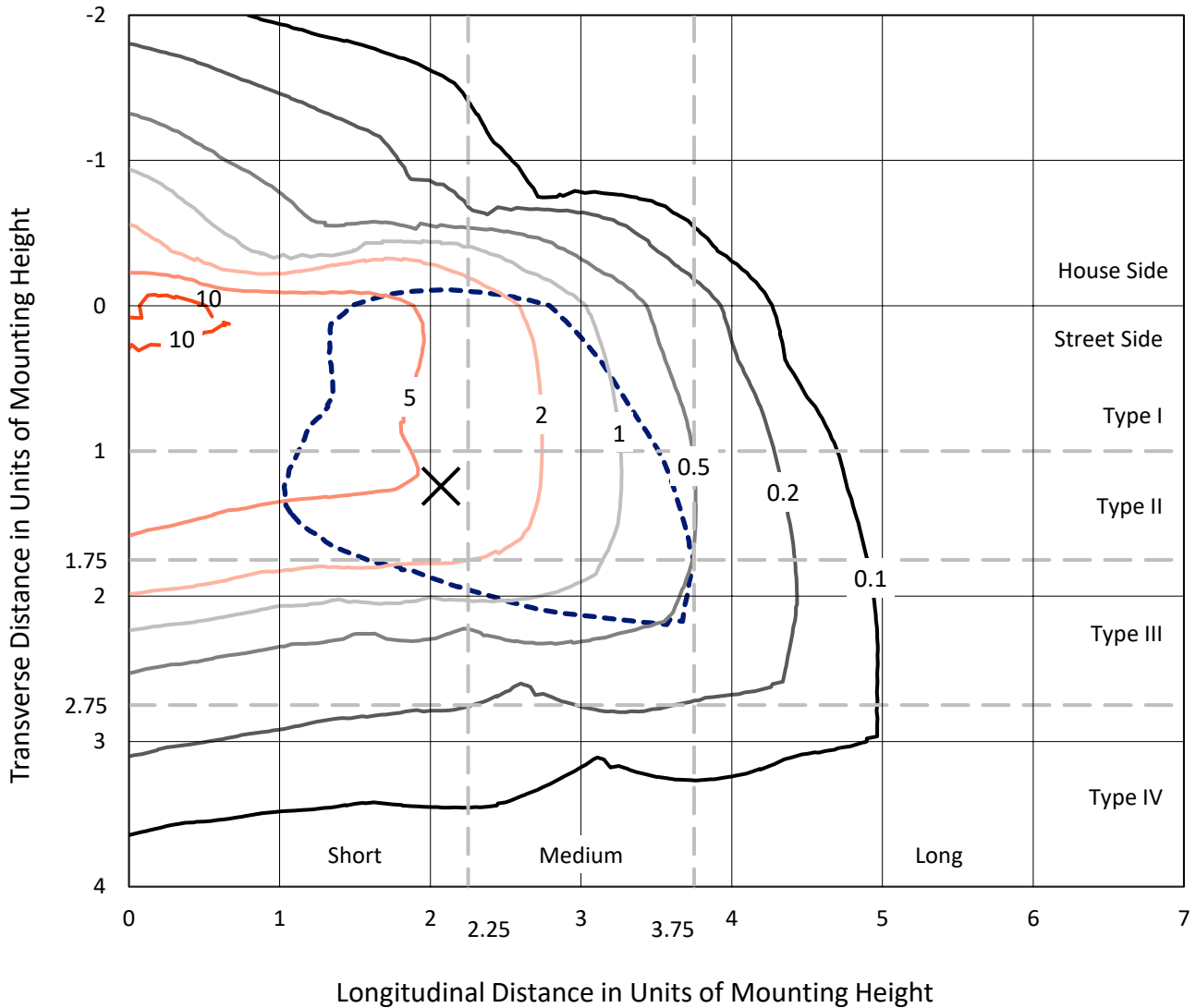
Input Watts (W): 66
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Iso-Footcandle Lines of Horizontal Illumination

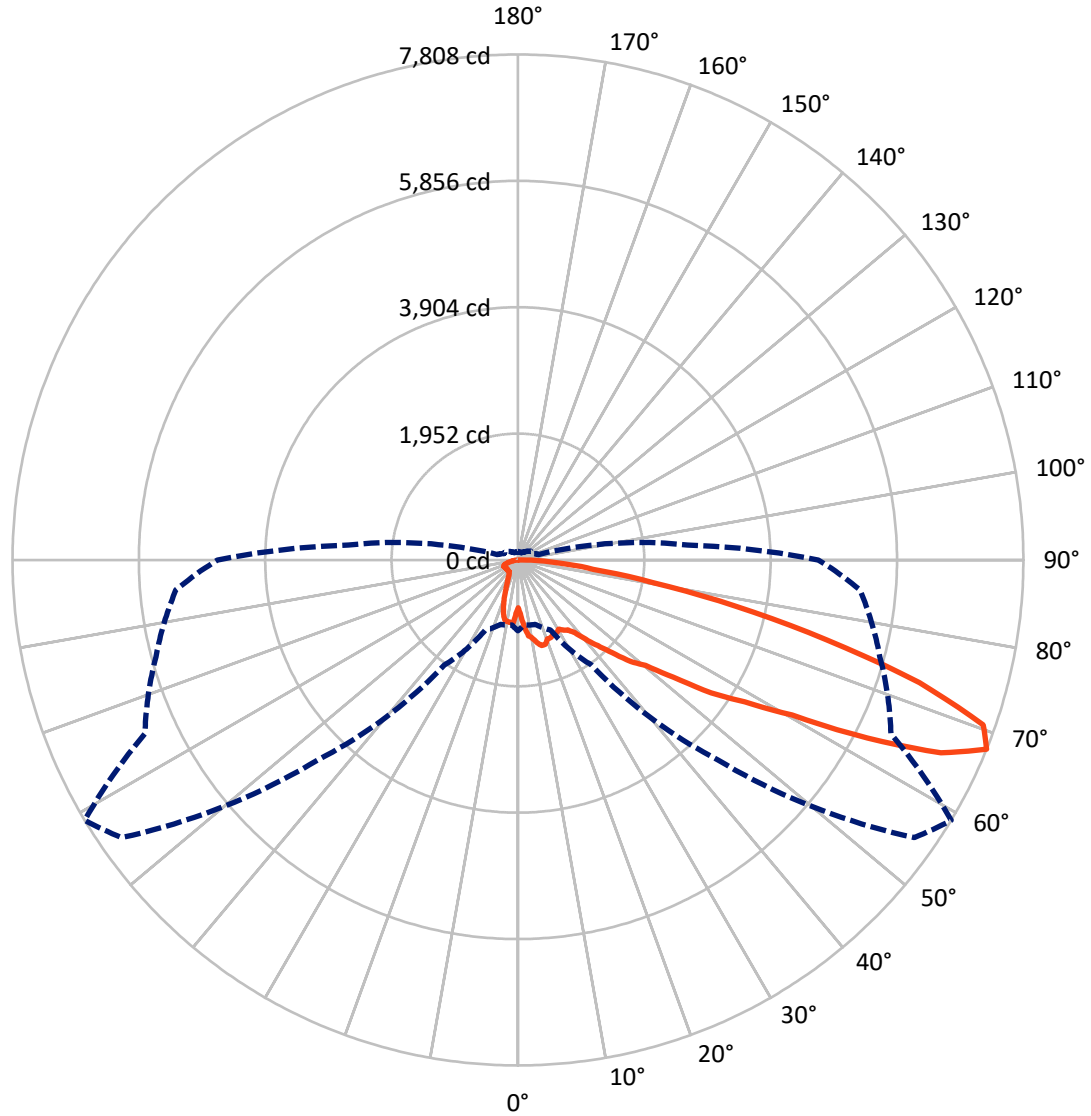
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 12.6 fc
 Type III - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 59-Deg Lateral - - - Horizontal Cone Through 67.5-Deg Vertical

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FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 1173.9 | 0.0 | 1173.9 |
| | % Fixture | 15.1 | 0.0 | 15.1 |
| Street Side | Lumens | 6625.1 | 0.0 | 6625.1 |
| | % Fixture | 84.9 | 0.0 | 84.9 |
| Total | Lumens | 7799.0 | 0.0 | 7799.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 96.4 | 1.2 |
| 10°-20° | 285.2 | 3.7 |
| 20°-30° | 407.3 | 5.2 |
| 30°-40° | 600.2 | 7.7 |
| 40°-50° | 1014.1 | 13.0 |
| 50°-60° | 1764.7 | 22.6 |
| 60°-70° | 2248.8 | 28.8 |
| 70°-80° | 1190.7 | 15.3 |
| 80°-90° | 191.6 | 2.5 |
| 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°-90° | 7799.0 | 100.0 |
| 0°-180° | 7799.0 | 100.0 |

Coefficient of Utilization



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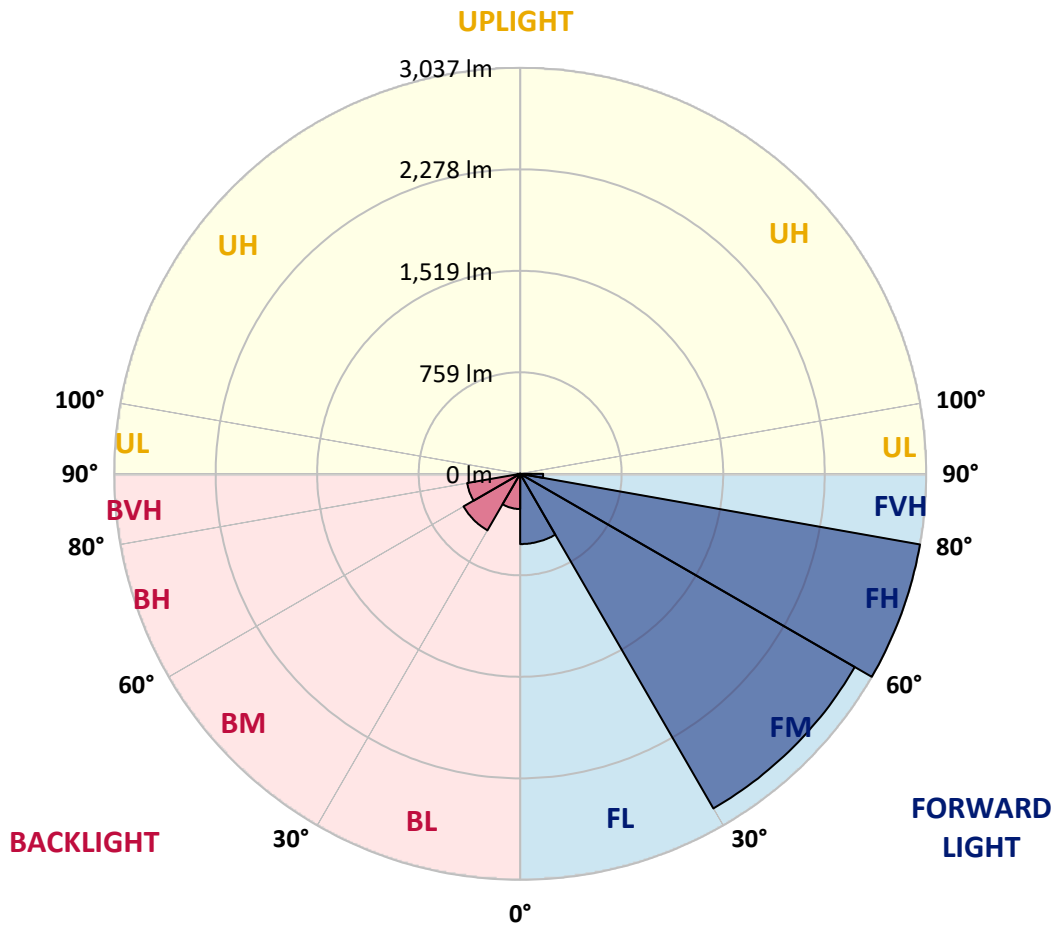
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 525.7 | 6.7 | | | |
| FM (30°-60°) | 2890.2 | 37.1 | | | |
| FH (60°-80°) | 3037.2 | 38.9 | | | G2/5000 |
| FVH (80°-90°) | 172.1 | 2.2 | | | G2/225 |
| BL (0°-30°) | 263.3 | 3.4 | B1/500 | | |
| BM (30°-60°) | 488.8 | 6.3 | B1/1000 | | |
| BH (60°-80°) | 402.3 | 5.2 | B1/500 | | G1/500 |
| BVH (80°-90°) | 19.5 | 0.3 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B1-U0-G2

Type III Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 59° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 738.0 | 738.0 | 738.0 | 738.0 | 738.0 | 738.0 | 738.0 | 738.0 | 738.0 | 738.0 | 738.0 |
| 2.5° | 921.4 | 878.5 | 832.8 | 845.7 | 871.8 | 883.7 | 870.8 | 858.3 | 842.1 | 822.9 | 888.4 |
| 5° | 1117.4 | 1053.6 | 1044.4 | 1044.0 | 1034.8 | 997.8 | 1045.3 | 1042.0 | 1061.2 | 1081.0 | 1131.9 |
| 7.5° | 1173.3 | 1149.5 | 1123.7 | 1135.9 | 1089.3 | 1087.3 | 1161.4 | 1182.5 | 1219.5 | 1207.3 | 1275.7 |
| 10° | 1144.5 | 1117.7 | 1131.3 | 1126.3 | 1130.6 | 1179.5 | 1224.8 | 1226.1 | 1265.8 | 1304.8 | 1260.8 |
| 12.5° | 1093.9 | 1095.9 | 1149.8 | 1147.8 | 1217.2 | 1308.1 | 1321.6 | 1311.1 | 1375.8 | 1349.4 | 1387.1 |
| 15° | 1130.0 | 1154.1 | 1140.5 | 1152.1 | 1179.5 | 1295.2 | 1332.9 | 1371.2 | 1432.7 | 1456.5 | 1418.8 |
| 17.5° | 1187.5 | 1200.4 | 1139.5 | 1133.3 | 1189.8 | 1244.6 | 1338.2 | 1370.9 | 1380.5 | 1550.0 | 1496.8 |
| 20° | 1163.0 | 1189.1 | 1129.6 | 1053.3 | 1147.1 | 1219.8 | 1312.1 | 1302.1 | 1348.7 | 1557.3 | 1513.0 |
| 22.5° | 1232.4 | 1189.1 | 1113.4 | 1059.2 | 1092.3 | 1159.0 | 1237.4 | 1302.5 | 1357.7 | 1514.6 | 1536.5 |
| 25° | 1245.6 | 1225.1 | 1154.4 | 1100.5 | 1089.3 | 1113.1 | 1224.8 | 1267.4 | 1360.6 | 1572.8 | 1523.9 |
| 27.5° | 1326.3 | 1295.5 | 1151.4 | 1153.1 | 1097.2 | 1055.3 | 1185.1 | 1274.7 | 1394.4 | 1536.8 | 1554.6 |
| 30° | 1426.4 | 1402.9 | 1222.2 | 1228.8 | 1151.4 | 1074.1 | 1212.2 | 1239.3 | 1413.8 | 1593.0 | 1593.3 |
| 32.5° | 1501.4 | 1542.7 | 1361.3 | 1271.4 | 1244.0 | 1186.1 | 1170.6 | 1292.6 | 1391.0 | 1694.8 | 1659.4 |
| 35° | 1636.6 | 1668.7 | 1468.4 | 1396.3 | 1303.5 | 1238.4 | 1283.6 | 1327.6 | 1485.9 | 1828.6 | 1757.6 |
| 37.5° | 1886.8 | 1849.8 | 1667.3 | 1554.0 | 1519.3 | 1425.4 | 1450.5 | 1419.8 | 1589.0 | 1979.0 | 1949.9 |
| 40° | 2031.5 | 1999.5 | 1807.5 | 1744.7 | 1607.2 | 1619.1 | 1587.7 | 1610.2 | 1726.8 | 2139.0 | 2129.7 |
| 42.5° | 2174.3 | 2131.3 | 1969.1 | 1925.5 | 1788.3 | 1730.1 | 1735.7 | 1808.5 | 1939.3 | 2397.4 | 2366.7 |
| 45° | 2315.4 | 2205.4 | 2134.3 | 2145.9 | 2079.8 | 1960.5 | 1968.7 | 2037.2 | 2171.3 | 2692.9 | 2622.1 |
| 47.5° | 2423.5 | 2332.6 | 2277.1 | 2262.9 | 2230.2 | 2389.8 | 2318.4 | 2346.2 | 2405.3 | 2955.9 | 2929.2 |
| 50° | 2628.1 | 2522.0 | 2449.6 | 2429.1 | 2540.2 | 2762.3 | 2616.8 | 2557.0 | 2682.9 | 3296.0 | 3282.1 |
| 52.5° | 2955.6 | 2823.4 | 2702.8 | 2701.5 | 2862.1 | 3006.2 | 3108.6 | 3005.5 | 3051.8 | 3644.3 | 3684.0 |
| 55° | 3241.5 | 3088.5 | 2980.1 | 3039.9 | 3268.6 | 3356.8 | 3704.8 | 3624.2 | 3585.2 | 3996.0 | 4109.4 |
| 57.5° | 3348.2 | 3169.4 | 3098.7 | 3186.9 | 3524.0 | 3977.5 | 4345.3 | 4133.1 | 4095.1 | 4393.9 | 4631.5 |
| 60° | 3113.9 | 2924.9 | 2929.2 | 3095.4 | 3679.4 | 4433.2 | 5045.6 | 4865.5 | 4642.8 | 4889.3 | 5121.3 |
| 62.5° | 2446.3 | 2275.4 | 2386.8 | 2639.6 | 3549.2 | 4876.1 | 5984.2 | 6060.3 | 5268.4 | 5300.1 | 5393.0 |
| 65° | 1662.7 | 1544.4 | 1644.9 | 1892.4 | 2878.6 | 5117.7 | 6878.2 | 7182.9 | 5838.2 | 5569.1 | 5510.3 |
| 67.5° | 1094.3 | 1010.6 | 1030.1 | 1194.7 | 1981.6 | 4362.8 | 7476.1 | 7808.2 | 6359.0 | 5789.9 | 5303.4 |
| 70° | 847.4 | 780.0 | 771.4 | 857.6 | 1175.2 | 3031.0 | 7121.8 | 7626.8 | 6676.3 | 5583.0 | 4622.6 |
| 72.5° | 665.0 | 613.7 | 618.4 | 701.3 | 910.2 | 1681.5 | 5511.0 | 6485.6 | 6198.4 | 4815.0 | 3551.5 |
| 75° | 518.5 | 476.6 | 500.0 | 594.9 | 841.8 | 1045.0 | 3802.3 | 4922.4 | 4792.1 | 3565.4 | 2025.6 |
| 77.5° | 376.4 | 349.3 | 382.7 | 506.6 | 791.2 | 896.6 | 2367.0 | 3434.2 | 3070.0 | 1830.6 | 695.0 |
| 80° | 246.9 | 231.7 | 259.1 | 413.1 | 717.5 | 862.9 | 1462.8 | 2104.2 | 1517.0 | 514.2 | 263.1 |
| 82.5° | 145.4 | 138.8 | 161.6 | 279.6 | 576.7 | 808.7 | 975.6 | 1169.3 | 620.7 | 217.5 | 139.8 |
| 85° | 76.3 | 71.4 | 95.8 | 160.6 | 397.6 | 738.3 | 768.1 | 700.0 | 299.8 | 94.5 | 66.8 |
| 87.5° | 25.4 | 24.8 | 40.7 | 62.1 | 150.4 | 392.0 | 409.8 | 332.5 | 123.6 | 27.4 | 14.5 |
| 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):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 738.0 | 738.0 | 738.0 | 738.0 | 738.0 | 738.0 | 738.0 | 738.0 | 738.0 | 738.0 | 738.0 |
| 2.5° | 897.3 | 884.1 | 808.1 | 818.6 | 828.5 | 823.6 | 820.6 | 786.2 | 782.9 | 831.9 | 827.9 |
| 5° | 1130.6 | 1075.8 | 1011.0 | 1008.0 | 965.4 | 921.7 | 930.3 | 916.5 | 920.4 | 940.6 | 942.6 |
| 7.5° | 1253.9 | 1185.5 | 1123.7 | 1023.2 | 937.9 | 868.9 | 879.8 | 876.5 | 867.5 | 913.2 | 925.4 |
| 10° | 1251.6 | 1190.8 | 1121.0 | 999.4 | 941.9 | 885.7 | 818.3 | 754.5 | 735.7 | 713.2 | 715.2 |
| 12.5° | 1334.2 | 1280.3 | 1128.3 | 1004.4 | 926.4 | 829.5 | 703.3 | 633.6 | 566.8 | 565.5 | 548.6 |
| 15° | 1360.0 | 1320.3 | 1143.8 | 975.9 | 817.6 | 678.8 | 548.3 | 472.6 | 424.4 | 414.8 | 400.6 |
| 17.5° | 1425.1 | 1363.0 | 1096.6 | 884.1 | 691.4 | 530.8 | 412.1 | 359.2 | 355.3 | 361.9 | 354.6 |
| 20° | 1429.4 | 1328.6 | 1011.3 | 748.2 | 555.6 | 402.2 | 336.1 | 309.7 | 323.9 | 340.1 | 339.4 |
| 22.5° | 1425.7 | 1285.3 | 937.6 | 632.6 | 417.4 | 323.2 | 294.5 | 288.5 | 301.7 | 325.9 | 328.8 |
| 25° | 1388.7 | 1271.1 | 845.4 | 519.5 | 338.8 | 277.0 | 269.0 | 272.7 | 289.2 | 317.6 | 317.6 |
| 27.5° | 1427.4 | 1213.2 | 729.7 | 422.7 | 284.9 | 246.5 | 252.2 | 261.4 | 273.6 | 306.0 | 312.0 |
| 30° | 1414.8 | 1232.4 | 636.5 | 340.4 | 251.2 | 225.4 | 238.0 | 247.2 | 261.1 | 294.8 | 297.8 |
| 32.5° | 1448.6 | 1181.2 | 558.2 | 286.2 | 229.0 | 217.1 | 220.1 | 232.7 | 250.8 | 277.3 | 282.6 |
| 35° | 1500.1 | 1200.0 | 468.3 | 257.5 | 218.1 | 207.5 | 213.2 | 223.1 | 241.3 | 267.0 | 271.3 |
| 37.5° | 1664.7 | 1199.0 | 406.2 | 241.6 | 216.1 | 205.6 | 208.2 | 215.2 | 236.3 | 259.8 | 269.7 |
| 40° | 1770.5 | 1267.8 | 349.7 | 238.0 | 213.8 | 204.6 | 202.3 | 209.9 | 226.7 | 254.5 | 261.4 |
| 42.5° | 1969.1 | 1309.7 | 325.2 | 236.6 | 213.5 | 199.0 | 196.6 | 205.6 | 222.1 | 247.9 | 258.4 |
| 45° | 2178.9 | 1369.6 | 305.7 | 236.0 | 212.5 | 198.0 | 191.0 | 202.3 | 216.1 | 240.9 | 253.2 |
| 47.5° | 2425.8 | 1496.1 | 294.8 | 233.7 | 210.5 | 199.3 | 189.0 | 194.7 | 210.2 | 235.0 | 247.2 |
| 50° | 2749.0 | 1663.7 | 297.1 | 230.4 | 213.5 | 199.6 | 186.1 | 188.7 | 202.9 | 227.0 | 239.6 |
| 52.5° | 3142.0 | 1923.1 | 312.0 | 231.7 | 215.5 | 198.0 | 184.7 | 183.4 | 195.7 | 216.8 | 229.4 |
| 55° | 3615.6 | 2291.3 | 356.6 | 238.0 | 215.5 | 197.6 | 182.8 | 176.8 | 186.1 | 203.3 | 215.5 |
| 57.5° | 4187.0 | 2717.6 | 443.9 | 240.9 | 213.8 | 195.7 | 178.5 | 167.9 | 173.5 | 187.7 | 199.3 |
| 60° | 4677.8 | 3061.7 | 533.7 | 242.9 | 217.1 | 191.0 | 169.9 | 156.7 | 160.3 | 171.2 | 181.4 |
| 62.5° | 4928.0 | 3158.2 | 560.8 | 241.3 | 226.1 | 188.1 | 159.6 | 144.8 | 145.1 | 154.3 | 163.6 |
| 65° | 4974.9 | 3029.6 | 452.1 | 239.6 | 237.6 | 187.7 | 152.4 | 134.5 | 132.2 | 138.8 | 146.7 |
| 67.5° | 4640.5 | 2629.7 | 326.2 | 236.0 | 238.9 | 185.7 | 147.4 | 126.2 | 120.3 | 124.9 | 131.5 |
| 70° | 3940.1 | 2117.8 | 274.0 | 228.7 | 223.1 | 175.8 | 138.8 | 117.7 | 109.7 | 113.0 | 118.0 |
| 72.5° | 2937.4 | 1566.9 | 238.9 | 213.2 | 194.3 | 150.4 | 125.6 | 108.1 | 99.8 | 102.1 | 105.8 |
| 75° | 1632.0 | 835.8 | 199.9 | 185.4 | 158.6 | 121.6 | 107.1 | 95.8 | 88.6 | 89.6 | 93.5 |
| 77.5° | 542.0 | 308.4 | 146.7 | 147.1 | 120.0 | 93.9 | 88.2 | 82.0 | 76.3 | 76.7 | 80.0 |
| 80° | 245.6 | 170.5 | 105.1 | 105.8 | 83.6 | 68.1 | 67.8 | 65.8 | 62.1 | 61.1 | 63.5 |
| 82.5° | 142.4 | 103.4 | 72.0 | 68.7 | 53.9 | 44.3 | 49.2 | 48.3 | 47.3 | 43.6 | 44.3 |
| 85° | 70.1 | 55.5 | 37.7 | 35.7 | 29.7 | 22.1 | 26.4 | 27.4 | 26.4 | 22.5 | 22.1 |
| 87.5° | 17.2 | 18.2 | 9.3 | 8.6 | 5.0 | 2.3 | 4.0 | 4.0 | 5.0 | 3.3 | 1.7 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)