

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: P368286

Luminaire Tested: **MSA-SA4A-760-U-T2**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P368286
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-8)
Test Lab: INNOVATION CENTER
Issue Date: 12/2/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: MSA-SA4A-760-U-T2
Description: MESA POST TOP DECORATIVE LUMINAIRE. (4) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II OPTICS.
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 15463 lumens
Efficiency: N/A
Efficacy: 119.9 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type II - Medium
BUG Rating: B2 - U0 - G3

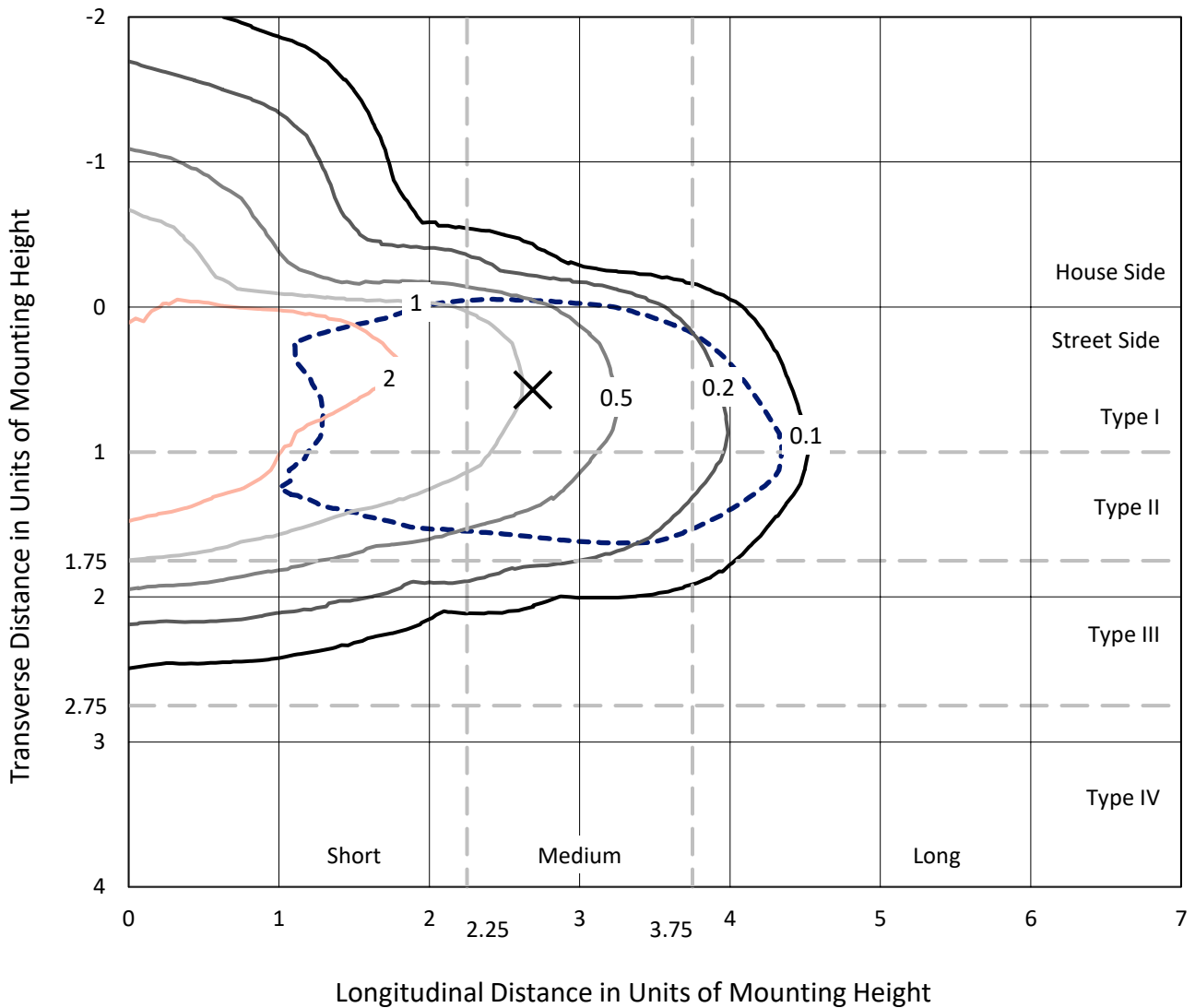
Input Watts (W): 129
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

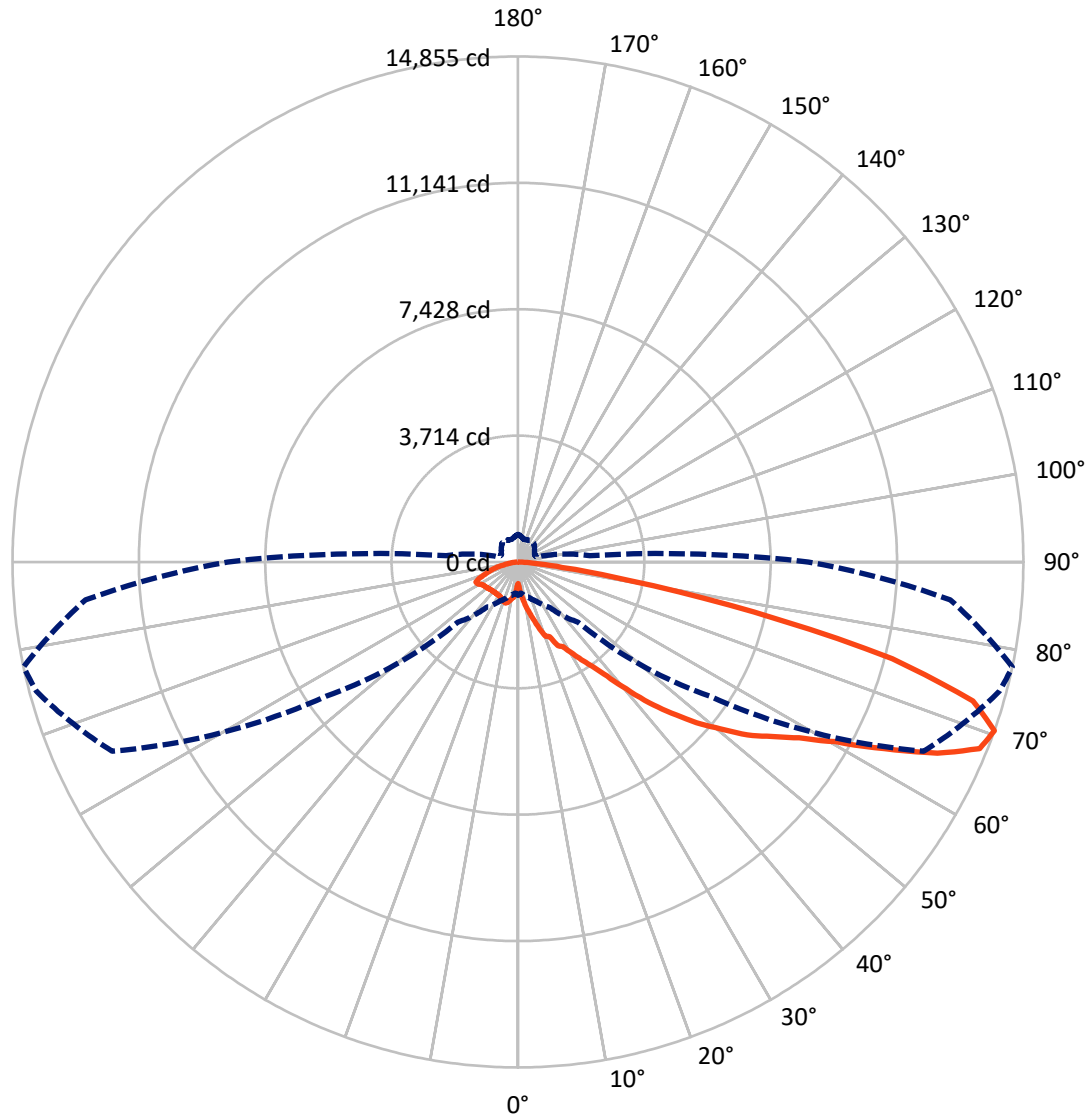
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 3.7 fc
 Type II - Medium - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 78-Deg Lateral - - - Horizontal Cone Through 70-Deg Vertical

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FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 2759.9 | 0.0 | 2759.9 |
| | % Fixture | 17.8 | 0.0 | 17.8 |
| Street Side | Lumens | 12703.1 | 0.0 | 12703.1 |
| | % Fixture | 82.2 | 0.0 | 82.2 |
| Total | Lumens | 15463.0 | 0.0 | 15463.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 97.4 | 0.6 |
| 10°-20° | 429.2 | 2.8 |
| 20°-30° | 826.2 | 5.3 |
| 30°-40° | 1391.7 | 9.0 |
| 40°-50° | 2408.0 | 15.6 |
| 50°-60° | 3635.8 | 23.5 |
| 60°-70° | 4027.1 | 26.0 |
| 70°-80° | 2321.8 | 15.0 |
| 80°-90° | 325.6 | 2.1 |
| 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°-90° | 15463.0 | 100.0 |
| 0°-180° | 15463.0 | 100.0 |

Coefficient of Utilization



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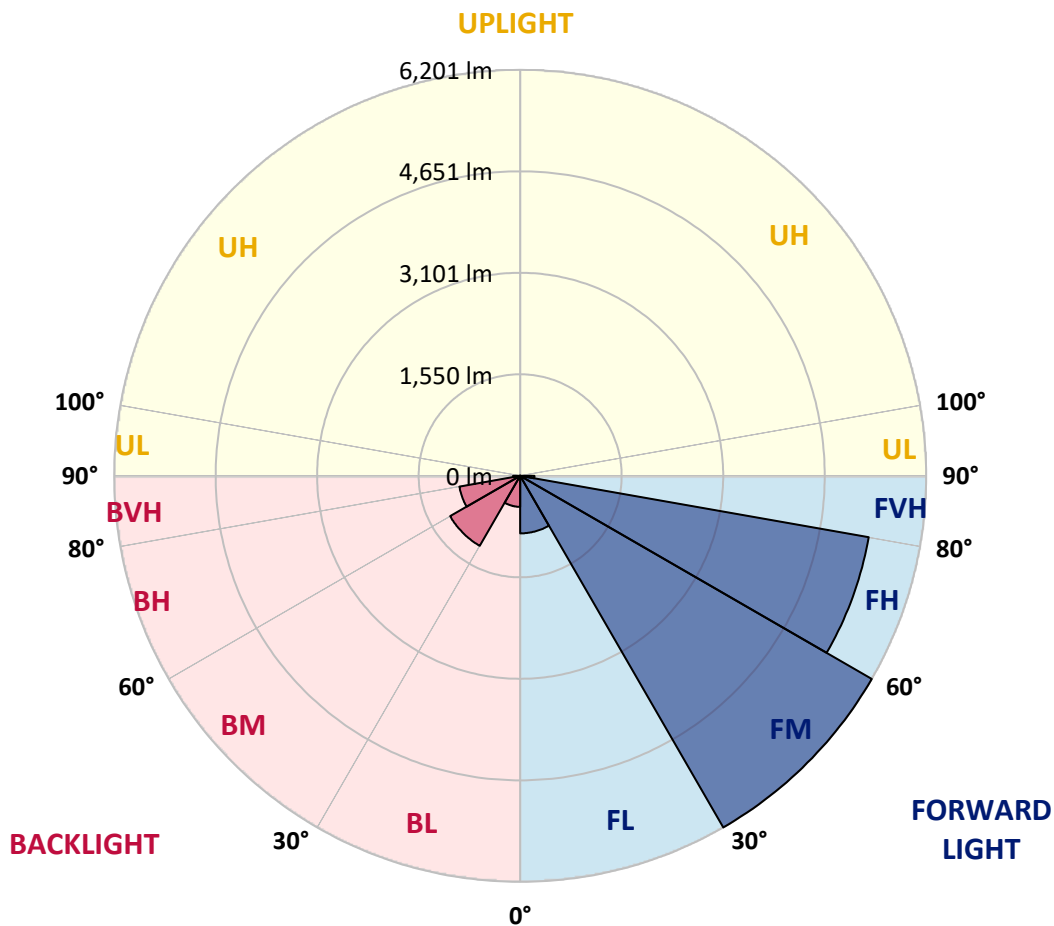
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 879.0 | 5.7 | | | |
| FM (30°-60°) | 6201.1 | 40.1 | | | |
| FH (60°-80°) | 5405.7 | 35.0 | | | G3/7500 |
| FVH (80°-90°) | 217.2 | 1.4 | | | G2/225 |
| BL (0°-30°) | 473.9 | 3.1 | B1/500 | | |
| BM (30°-60°) | 1234.4 | 8.0 | B2/2500 | | |
| BH (60°-80°) | 943.2 | 6.1 | B2/1000 | | G2/1000 |
| BVH (80°-90°) | 108.4 | 0.7 | | | G2/225 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B2-U0-G3

Type II Medium





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 78° | 85° |
|-------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|
| 0° | 630.4 | 630.4 | 630.4 | 630.4 | 630.4 | 630.4 | 630.4 | 630.4 | 630.4 | 630.4 | 630.4 |
| 2.5° | 811.6 | 782.6 | 738.7 | 756.8 | 778.7 | 781.3 | 774.2 | 734.2 | 720.7 | 751.0 | 760.0 |
| 5° | 1137.1 | 1088.1 | 1058.5 | 1048.8 | 1015.9 | 947.6 | 996.6 | 971.4 | 976.6 | 961.8 | 990.8 |
| 7.5° | 1411.1 | 1378.2 | 1334.4 | 1322.1 | 1246.7 | 1193.2 | 1226.7 | 1215.7 | 1162.9 | 1142.3 | 1175.1 |
| 10° | 1550.3 | 1514.2 | 1516.1 | 1489.7 | 1469.7 | 1474.9 | 1458.1 | 1409.8 | 1370.5 | 1342.7 | 1263.4 |
| 12.5° | 1634.1 | 1643.1 | 1691.5 | 1677.9 | 1753.4 | 1815.2 | 1768.2 | 1696.6 | 1572.2 | 1547.1 | 1468.4 |
| 15° | 1833.3 | 1866.8 | 1821.7 | 1842.3 | 1874.5 | 1993.1 | 1973.8 | 1958.3 | 1826.8 | 1777.8 | 1632.8 |
| 17.5° | 2038.3 | 2044.7 | 1976.4 | 1965.4 | 2042.8 | 2102.7 | 2178.2 | 2091.1 | 2107.2 | 2073.1 | 1838.4 |
| 20° | 2082.1 | 2126.6 | 2028.6 | 1960.9 | 2120.1 | 2238.7 | 2332.2 | 2240.0 | 2325.1 | 2334.2 | 2008.0 |
| 22.5° | 2242.6 | 2189.1 | 2060.2 | 1993.8 | 2133.0 | 2278.7 | 2430.8 | 2482.4 | 2455.3 | 2379.3 | 2171.7 |
| 25° | 2354.1 | 2325.8 | 2194.3 | 2120.8 | 2173.6 | 2307.7 | 2574.6 | 2709.3 | 2733.2 | 2722.9 | 2327.7 |
| 27.5° | 2561.1 | 2575.2 | 2304.5 | 2325.1 | 2251.6 | 2263.9 | 2661.0 | 3010.4 | 2861.4 | 2820.2 | 2521.1 |
| 30° | 2887.9 | 2824.7 | 2521.1 | 2537.8 | 2416.0 | 2395.4 | 2843.4 | 3270.1 | 3136.7 | 3087.1 | 2680.3 |
| 32.5° | 3228.9 | 3234.7 | 2866.0 | 2722.9 | 2657.7 | 2637.1 | 2807.3 | 3406.1 | 3484.8 | 3420.3 | 2920.8 |
| 35° | 3709.8 | 3676.2 | 3239.8 | 3051.6 | 2816.3 | 2780.2 | 3064.5 | 3800.7 | 3945.0 | 3764.6 | 3206.3 |
| 37.5° | 4442.0 | 4340.8 | 3832.9 | 3397.8 | 3223.7 | 3182.5 | 3431.9 | 4154.5 | 4479.4 | 4255.1 | 3673.0 |
| 40° | 5029.9 | 4824.3 | 4362.8 | 3832.9 | 3538.3 | 3589.2 | 3693.0 | 4583.9 | 5033.8 | 4907.5 | 4104.9 |
| 42.5° | 5498.6 | 5316.1 | 4737.9 | 4365.3 | 3965.0 | 3901.9 | 4015.3 | 5115.7 | 5788.0 | 5664.2 | 4643.8 |
| 45° | 5947.9 | 5576.6 | 5159.5 | 4824.3 | 4439.5 | 4516.2 | 4499.4 | 5658.4 | 6713.0 | 6332.1 | 5120.2 |
| 47.5° | 6391.4 | 6042.6 | 5606.2 | 5155.6 | 4768.2 | 5245.9 | 5067.3 | 6062.0 | 7337.0 | 7054.7 | 5621.7 |
| 50° | 6961.2 | 6577.7 | 6080.7 | 5627.5 | 5395.4 | 5744.8 | 5445.1 | 6403.6 | 8035.8 | 7704.4 | 6094.8 |
| 52.5° | 7339.6 | 6966.4 | 6530.6 | 6207.0 | 6185.7 | 6051.0 | 5974.3 | 6836.1 | 8648.2 | 8447.0 | 6596.3 |
| 55° | 7295.1 | 6935.4 | 6738.2 | 6773.6 | 7036.6 | 6582.2 | 6519.6 | 7476.2 | 9287.0 | 9054.3 | 7137.8 |
| 57.5° | 6737.5 | 6344.9 | 6386.8 | 6597.0 | 7303.5 | 7514.9 | 7408.6 | 8160.2 | 9856.8 | 9751.1 | 7807.6 |
| 60° | 5248.5 | 5046.7 | 5387.7 | 5771.9 | 6946.4 | 7788.2 | 8536.0 | 8994.3 | 10558.2 | 10727.0 | 8859.6 |
| 62.5° | 3409.4 | 3139.9 | 3678.8 | 4331.2 | 5880.8 | 7607.7 | 9684.1 | 10576.2 | 11706.9 | 12090.4 | 10458.2 |
| 65° | 1766.2 | 1723.1 | 2100.2 | 2699.6 | 4094.0 | 6486.8 | 10088.9 | 12235.4 | 13103.1 | 13549.8 | 11985.3 |
| 67.5° | 1284.1 | 1204.1 | 1378.8 | 1731.4 | 2499.2 | 4423.3 | 9321.8 | 13504.7 | 14224.1 | 14633.4 | 12873.0 |
| 70° | 977.9 | 918.6 | 1052.0 | 1270.5 | 1632.2 | 2498.5 | 6881.3 | 13158.5 | 14656.6 | 14855.2 | 12755.0 |
| 72.5° | 732.3 | 681.4 | 798.0 | 1001.7 | 1257.6 | 1406.6 | 4067.5 | 10819.2 | 13918.5 | 13986.2 | 11447.7 |
| 75° | 584.7 | 545.3 | 595.6 | 790.9 | 1024.9 | 957.3 | 2160.7 | 7838.5 | 11308.5 | 11366.5 | 8744.2 |
| 77.5° | 479.6 | 446.1 | 466.7 | 593.0 | 797.4 | 720.0 | 1072.0 | 4986.1 | 7179.7 | 7090.8 | 4919.7 |
| 80° | 391.3 | 362.3 | 371.9 | 428.7 | 607.2 | 537.6 | 602.1 | 2601.0 | 3424.8 | 3286.9 | 2046.0 |
| 82.5° | 301.0 | 276.5 | 295.9 | 315.2 | 439.6 | 386.1 | 351.3 | 1183.5 | 1402.7 | 1306.6 | 750.3 |
| 85° | 201.8 | 179.2 | 257.2 | 236.6 | 287.5 | 237.2 | 192.1 | 471.2 | 522.8 | 487.3 | 263.6 |
| 87.5° | 55.4 | 52.2 | 86.4 | 118.0 | 118.0 | 89.6 | 70.3 | 114.1 | 145.7 | 127.6 | 61.9 |
| 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° | 630.4 | 630.4 | 630.4 | 630.4 | 630.4 | 630.4 | 630.4 | 630.4 | 630.4 | 630.4 | 630.4 |
| 2.5° | 763.9 | 749.7 | 712.3 | 709.1 | 718.1 | 719.4 | 713.6 | 700.1 | 693.0 | 731.6 | 725.8 |
| 5° | 983.7 | 933.4 | 903.1 | 875.4 | 836.7 | 809.0 | 816.1 | 835.4 | 841.9 | 870.9 | 874.1 |
| 7.5° | 1154.5 | 1088.1 | 1021.7 | 932.8 | 874.1 | 836.7 | 865.1 | 885.7 | 901.8 | 943.1 | 959.8 |
| 10° | 1228.6 | 1156.4 | 1062.3 | 968.9 | 952.7 | 959.2 | 943.1 | 948.2 | 973.4 | 975.3 | 983.7 |
| 12.5° | 1366.6 | 1284.7 | 1115.2 | 1030.7 | 1026.2 | 1039.8 | 1034.0 | 1057.8 | 1075.2 | 1122.3 | 1102.3 |
| 15° | 1498.7 | 1394.3 | 1155.2 | 1068.8 | 1050.1 | 1077.2 | 1108.7 | 1148.7 | 1186.1 | 1230.6 | 1208.0 |
| 17.5° | 1659.2 | 1502.0 | 1157.1 | 1051.4 | 1054.6 | 1112.6 | 1145.5 | 1167.4 | 1278.9 | 1340.2 | 1309.2 |
| 20° | 1760.4 | 1512.9 | 1113.9 | 1008.2 | 1054.6 | 1106.8 | 1152.6 | 1176.4 | 1301.5 | 1393.7 | 1414.9 |
| 22.5° | 1852.0 | 1516.8 | 1080.4 | 985.0 | 1014.6 | 1083.6 | 1152.6 | 1205.4 | 1285.4 | 1373.7 | 1376.9 |
| 25° | 1902.3 | 1513.6 | 1037.2 | 986.9 | 1014.0 | 1048.1 | 1109.4 | 1157.7 | 1217.0 | 1340.2 | 1343.4 |
| 27.5° | 2031.2 | 1471.7 | 994.6 | 994.6 | 1008.8 | 1010.1 | 1088.1 | 1116.5 | 1124.9 | 1237.0 | 1257.0 |
| 30° | 2068.6 | 1480.7 | 989.5 | 993.4 | 1000.4 | 987.6 | 1021.7 | 1040.4 | 1052.7 | 1149.3 | 1152.6 |
| 32.5° | 2128.5 | 1408.5 | 1005.0 | 981.7 | 972.7 | 970.8 | 979.2 | 995.9 | 1001.1 | 1060.4 | 1071.4 |
| 35° | 2201.4 | 1379.5 | 1010.1 | 978.5 | 960.5 | 950.8 | 975.9 | 955.3 | 971.4 | 1041.1 | 1048.8 |
| 37.5° | 2438.6 | 1339.5 | 1036.5 | 978.5 | 955.3 | 944.4 | 932.1 | 941.8 | 999.2 | 1066.2 | 1107.4 |
| 40° | 2590.1 | 1351.8 | 1030.1 | 988.2 | 937.9 | 927.6 | 907.0 | 942.4 | 1031.4 | 1150.0 | 1180.9 |
| 42.5° | 2855.6 | 1358.8 | 1037.8 | 983.7 | 943.7 | 903.8 | 917.3 | 956.0 | 1049.4 | 1117.1 | 1164.8 |
| 45° | 3130.3 | 1380.8 | 1032.7 | 970.1 | 930.8 | 949.5 | 930.8 | 965.6 | 1010.1 | 1012.0 | 1048.1 |
| 47.5° | 3399.7 | 1469.1 | 1021.7 | 942.4 | 927.6 | 976.6 | 928.9 | 934.7 | 937.9 | 949.5 | 992.1 |
| 50° | 3716.2 | 1563.2 | 1006.2 | 903.8 | 932.1 | 977.9 | 936.0 | 907.6 | 904.4 | 942.4 | 990.1 |
| 52.5° | 4075.9 | 1669.6 | 986.3 | 866.4 | 905.7 | 965.6 | 960.5 | 909.6 | 881.8 | 918.6 | 966.3 |
| 55° | 4499.4 | 1790.7 | 963.1 | 829.0 | 876.7 | 966.9 | 974.0 | 896.0 | 882.5 | 922.4 | 973.4 |
| 57.5° | 5062.2 | 1966.1 | 917.9 | 774.8 | 841.2 | 946.9 | 939.2 | 880.5 | 867.7 | 910.2 | 963.1 |
| 60° | 6022.6 | 2303.2 | 853.5 | 721.3 | 803.2 | 897.9 | 910.8 | 852.8 | 839.9 | 887.0 | 942.4 |
| 62.5° | 7308.6 | 2708.7 | 775.5 | 669.1 | 756.8 | 845.1 | 875.4 | 812.9 | 811.6 | 871.5 | 929.5 |
| 65° | 8505.7 | 2938.8 | 694.9 | 621.4 | 709.1 | 796.1 | 835.4 | 775.5 | 778.1 | 853.5 | 911.5 |
| 67.5° | 9003.3 | 2668.1 | 622.7 | 578.9 | 654.3 | 740.0 | 802.5 | 746.5 | 738.1 | 829.0 | 882.5 |
| 70° | 8536.0 | 2119.5 | 560.2 | 533.7 | 592.4 | 679.4 | 756.8 | 707.8 | 688.4 | 771.0 | 812.9 |
| 72.5° | 7553.0 | 1766.9 | 501.5 | 480.9 | 538.3 | 615.6 | 694.9 | 655.6 | 630.4 | 693.6 | 731.0 |
| 75° | 5904.0 | 1449.7 | 434.5 | 428.7 | 476.4 | 557.6 | 630.4 | 603.4 | 571.1 | 611.1 | 648.5 |
| 77.5° | 3361.7 | 917.3 | 364.9 | 368.7 | 402.9 | 488.6 | 553.1 | 531.8 | 498.9 | 515.7 | 558.9 |
| 80° | 1345.3 | 462.8 | 293.3 | 295.9 | 324.9 | 401.6 | 458.3 | 450.6 | 416.4 | 430.0 | 459.6 |
| 82.5° | 502.8 | 254.0 | 216.6 | 217.9 | 246.9 | 317.8 | 391.3 | 387.4 | 355.2 | 345.5 | 362.3 |
| 85° | 199.8 | 125.7 | 132.8 | 138.6 | 166.3 | 228.8 | 313.9 | 278.5 | 240.4 | 210.8 | 221.1 |
| 87.5° | 47.7 | 40.0 | 46.4 | 49.0 | 54.1 | 71.6 | 114.7 | 92.2 | 94.8 | 76.1 | 56.7 |
| 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)