

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: P367795

Luminaire Tested: **MSA-SA3B-727-U-SL4-HSS**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P367795
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-21)
Test Lab: INNOVATION CENTER
Issue Date: 12/2/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: MSA-SA3B-727-U-SL4-HSS
Description: MESA POST TOP DECORATIVE LUMINAIRE. (3) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV SPILL LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 10168 lumens
Efficiency: N/A
Efficacy: 80.7 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B1 - U0 - G2

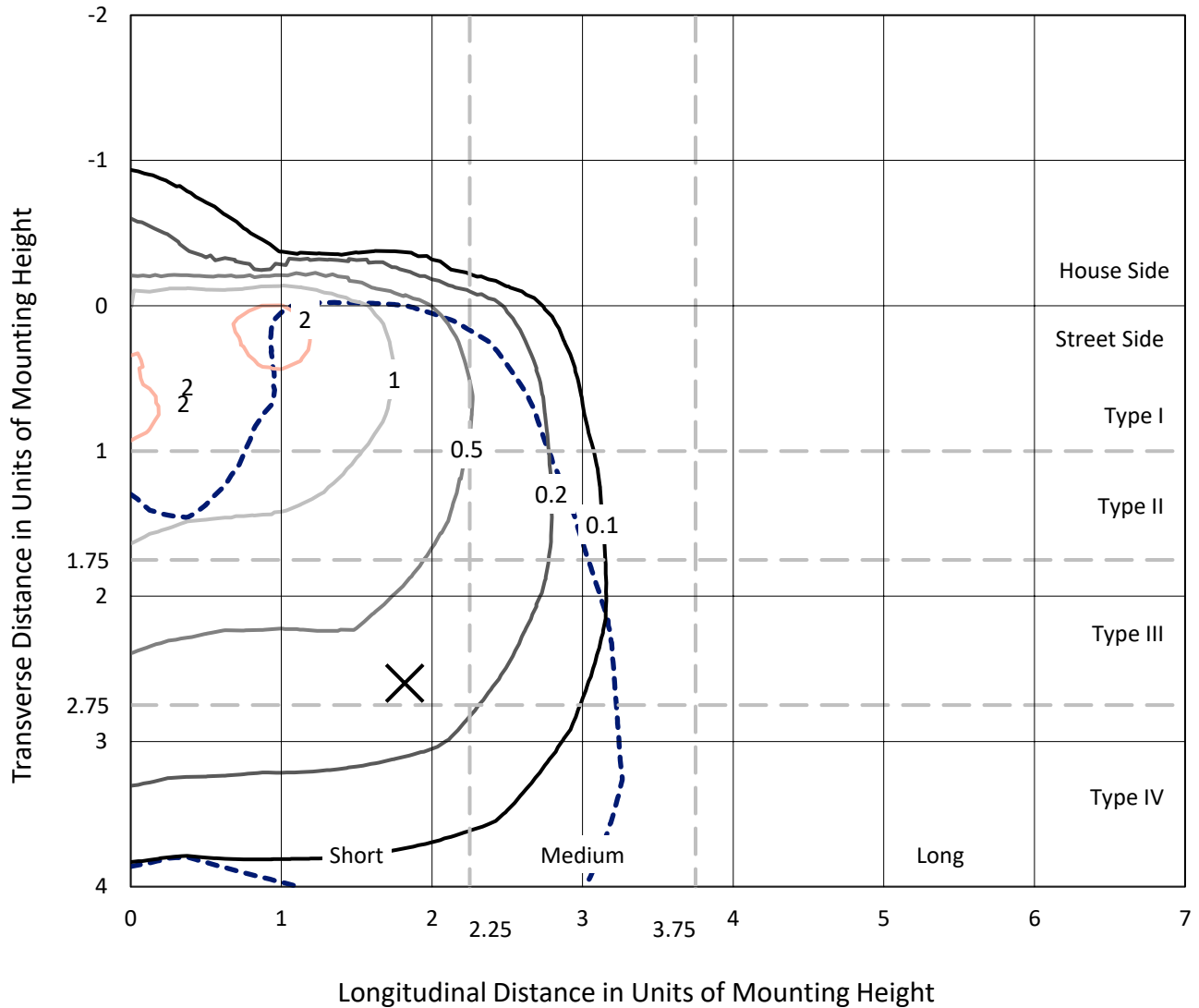
Input Watts (W): 126
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

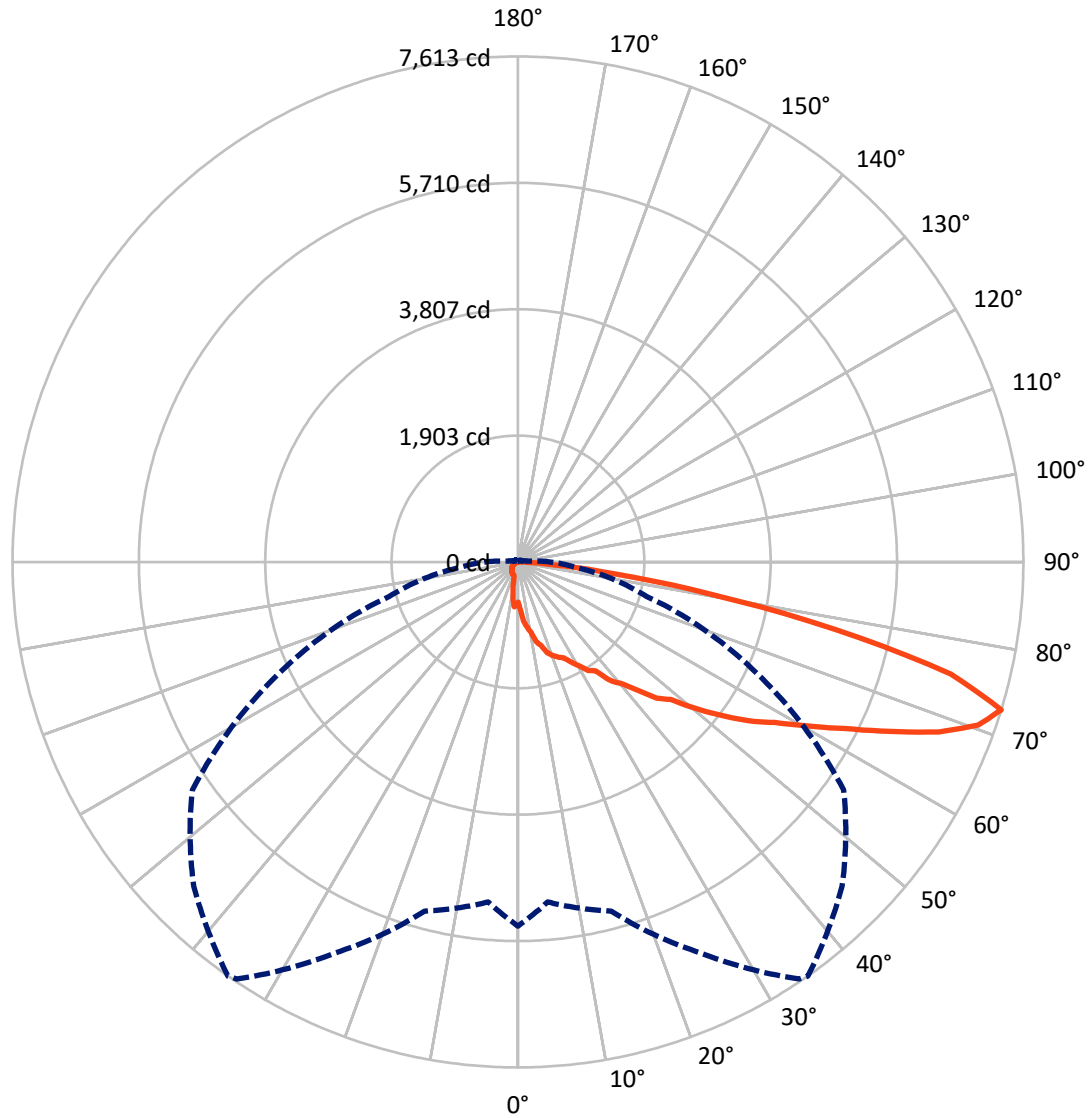
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 2.3 fc
 Type IV - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 35-Deg Lateral - - - Horizontal Cone Through 72.5-Deg Vertical

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FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 793.1 | 0.0 | 793.1 |
| | % Fixture | 7.8 | 0.0 | 7.8 |
| Street Side | Lumens | 9374.9 | 0.0 | 9374.9 |
| | % Fixture | 92.2 | 0.0 | 92.2 |
| Total | Lumens | 10168.0 | 0.0 | 10168.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 77.2 | 0.8 |
| 10°-20° | 260.2 | 2.6 |
| 20°-30° | 473.9 | 4.7 |
| 30°-40° | 817.4 | 8.0 |
| 40°-50° | 1453.0 | 14.3 |
| 50°-60° | 2168.3 | 21.3 |
| 60°-70° | 2770.2 | 27.2 |
| 70°-80° | 1927.3 | 19.0 |
| 80°-90° | 220.5 | 2.2 |
| 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° | 10168.0 | 100.0 |
| 0°-180° | 10168.0 | 100.0 |

Coefficient of Utilization

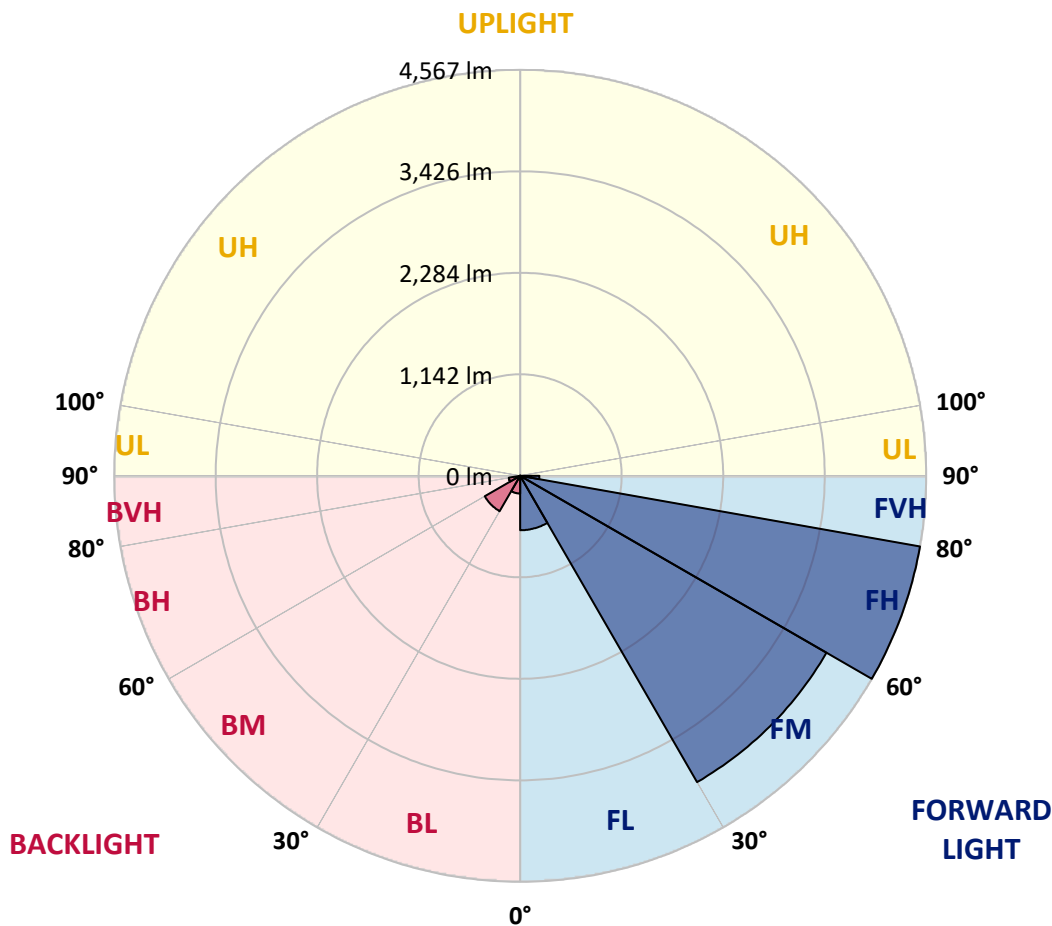


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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 611.9 | 6.0 | | | |
| FM (30°-60°) | 3978.8 | 39.1 | | | |
| FH (60°-80°) | 4567.5 | 44.9 | | | G2/5000 |
| FVH (80°-90°) | 216.8 | 2.1 | | | G2/225 |
| BL (0°-30°) | 199.5 | 2.0 | B1/500 | | |
| BM (30°-60°) | 459.9 | 4.5 | B1/1000 | | |
| BH (60°-80°) | 130.0 | 1.3 | B1/500 | | G1/500 |
| BVH (80°-90°) | 3.7 | 0.0 | | | G0/10 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B1-U0-G2
 Type IV Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 34° | 35° | 45° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 605.7 | 605.7 | 605.7 | 605.7 | 605.7 | 605.7 | 605.7 | 605.7 | 605.7 | 605.7 | 605.7 |
| 2.5° | 770.8 | 740.6 | 691.6 | 695.2 | 717.1 | 721.7 | 728.4 | 711.0 | 695.7 | 668.6 | 721.2 |
| 5° | 987.5 | 944.1 | 916.5 | 907.8 | 895.0 | 896.0 | 864.9 | 876.1 | 873.0 | 893.0 | 917.0 |
| 7.5° | 1109.7 | 1085.7 | 1050.9 | 1041.2 | 994.2 | 989.1 | 950.7 | 1002.4 | 1007.5 | 1000.3 | 1039.7 |
| 10° | 1158.3 | 1126.6 | 1130.7 | 1094.4 | 1070.8 | 1077.0 | 1083.1 | 1087.2 | 1093.8 | 1100.5 | 1052.4 |
| 12.5° | 1186.9 | 1192.5 | 1248.2 | 1210.4 | 1233.9 | 1233.9 | 1275.3 | 1231.3 | 1232.9 | 1184.8 | 1193.0 |
| 15° | 1315.7 | 1346.9 | 1321.8 | 1321.3 | 1295.8 | 1302.4 | 1350.4 | 1315.7 | 1333.6 | 1319.3 | 1264.1 |
| 17.5° | 1477.2 | 1483.3 | 1435.8 | 1414.8 | 1437.8 | 1438.4 | 1417.9 | 1416.4 | 1354.0 | 1459.3 | 1392.4 |
| 20° | 1528.8 | 1563.6 | 1496.1 | 1414.3 | 1509.9 | 1505.3 | 1503.8 | 1479.8 | 1376.0 | 1522.2 | 1467.0 |
| 22.5° | 1669.4 | 1619.8 | 1573.8 | 1520.1 | 1557.5 | 1557.5 | 1551.8 | 1499.2 | 1458.8 | 1516.6 | 1540.1 |
| 25° | 1713.4 | 1719.5 | 1659.7 | 1642.3 | 1643.3 | 1597.3 | 1593.2 | 1570.7 | 1531.9 | 1630.6 | 1583.5 |
| 27.5° | 1864.7 | 1862.1 | 1718.5 | 1767.0 | 1705.2 | 1705.7 | 1592.7 | 1643.3 | 1650.0 | 1636.2 | 1688.8 |
| 30° | 2013.4 | 2054.8 | 1838.1 | 1899.4 | 1834.5 | 1815.1 | 1704.7 | 1749.6 | 1761.4 | 1745.6 | 1812.0 |
| 32.5° | 2203.0 | 2263.9 | 2053.3 | 1993.0 | 1893.8 | 1949.0 | 1872.8 | 1766.5 | 1824.8 | 1966.4 | 2003.7 |
| 35° | 2403.9 | 2433.6 | 2209.2 | 2124.8 | 2012.9 | 2012.4 | 2009.8 | 2018.5 | 2082.9 | 2242.4 | 2274.1 |
| 37.5° | 2764.8 | 2694.8 | 2491.8 | 2298.6 | 2323.7 | 2267.9 | 2229.1 | 2270.0 | 2337.0 | 2599.7 | 2735.1 |
| 40° | 2966.2 | 2915.6 | 2629.8 | 2515.3 | 2391.1 | 2411.6 | 2516.9 | 2512.3 | 2690.7 | 2965.7 | 3168.6 |
| 42.5° | 3161.9 | 3113.9 | 2832.8 | 2740.2 | 2580.8 | 2636.5 | 2682.5 | 2740.8 | 3106.2 | 3549.9 | 3661.3 |
| 45° | 3336.2 | 3195.2 | 2996.8 | 3000.4 | 2917.6 | 2924.3 | 3005.5 | 3059.2 | 3587.7 | 4042.6 | 4120.8 |
| 47.5° | 3441.5 | 3325.5 | 3135.4 | 3131.8 | 3126.7 | 3095.5 | 3478.3 | 3527.4 | 3971.6 | 4511.9 | 4519.0 |
| 50° | 3589.8 | 3444.6 | 3278.0 | 3281.0 | 3399.1 | 3465.0 | 3922.0 | 3916.9 | 4342.2 | 4903.4 | 4738.3 |
| 52.5° | 3774.3 | 3596.9 | 3413.4 | 3549.9 | 3732.4 | 3839.7 | 4210.8 | 4362.1 | 4740.4 | 5149.3 | 4824.2 |
| 55° | 4010.4 | 3788.6 | 3611.7 | 3786.6 | 4184.7 | 4226.1 | 4493.5 | 4812.9 | 5174.3 | 5400.2 | 4851.8 |
| 57.5° | 4287.5 | 4022.7 | 3879.6 | 4161.2 | 4558.4 | 4559.4 | 4904.9 | 5293.4 | 5440.6 | 5502.5 | 4820.6 |
| 60° | 4586.0 | 4277.3 | 4133.1 | 4386.6 | 4970.4 | 5012.3 | 5362.4 | 5558.7 | 5711.0 | 5554.1 | 4764.9 |
| 62.5° | 4848.7 | 4507.8 | 4395.8 | 4693.8 | 5422.2 | 5521.4 | 5761.1 | 5733.0 | 5906.3 | 5619.0 | 4623.3 |
| 65° | 5161.5 | 4806.3 | 4732.7 | 5172.8 | 6012.1 | 6148.6 | 6208.9 | 6042.2 | 5971.7 | 5568.9 | 4254.8 |
| 67.5° | 5471.3 | 5139.0 | 5137.0 | 5703.9 | 6785.4 | 6832.5 | 6769.1 | 6478.2 | 5895.5 | 5127.3 | 3579.5 |
| 70° | 5689.6 | 5332.8 | 5467.2 | 6285.5 | 7488.3 | 7356.4 | 7089.6 | 6684.2 | 5345.6 | 3929.7 | 2338.5 |
| 72.5° | 5484.6 | 5140.6 | 5443.7 | 6492.6 | 7575.2 | 7613.0 | 6904.0 | 5987.5 | 3971.6 | 2009.8 | 846.5 |
| 75° | 4167.9 | 3957.3 | 4726.6 | 5760.1 | 6725.6 | 6734.3 | 5762.6 | 4223.1 | 1955.6 | 545.9 | 234.1 |
| 77.5° | 2099.3 | 2032.3 | 2991.7 | 4089.2 | 4907.0 | 4892.7 | 3959.3 | 2262.3 | 629.2 | 181.5 | 118.1 |
| 80° | 1062.7 | 1009.0 | 1273.3 | 2206.1 | 2914.0 | 2935.5 | 2260.8 | 1013.1 | 317.4 | 98.7 | 81.8 |
| 82.5° | 652.7 | 619.5 | 696.7 | 998.3 | 1414.3 | 1448.6 | 857.7 | 641.5 | 196.8 | 58.3 | 74.6 |
| 85° | 126.3 | 132.9 | 400.2 | 499.9 | 564.8 | 551.5 | 254.0 | 528.0 | 59.3 | 34.8 | 54.2 |
| 87.5° | 0.0 | 2.0 | 92.5 | 163.1 | 163.6 | 145.2 | 57.8 | 117.1 | 8.2 | 9.7 | 6.6 |
| 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° | 605.7 | 605.7 | 605.7 | 605.7 | 605.7 | 605.7 | 605.7 | 605.7 | 605.7 | 605.7 | 605.7 |
| 2.5° | 729.9 | 722.2 | 658.4 | 651.2 | 652.7 | 642.0 | 638.4 | 615.9 | 610.3 | 645.1 | 651.2 |
| 5° | 906.8 | 855.7 | 796.4 | 774.9 | 741.7 | 685.4 | 677.3 | 663.0 | 647.1 | 653.2 | 648.6 |
| 7.5° | 1015.1 | 947.2 | 883.8 | 770.8 | 677.3 | 595.5 | 582.2 | 557.7 | 533.1 | 533.6 | 549.5 |
| 10° | 1032.5 | 975.3 | 887.9 | 750.4 | 643.5 | 541.3 | 452.4 | 388.0 | 358.8 | 332.8 | 340.4 |
| 12.5° | 1133.2 | 1080.0 | 919.0 | 744.2 | 594.5 | 435.0 | 318.4 | 255.6 | 228.0 | 218.8 | 217.7 |
| 15° | 1214.0 | 1172.1 | 972.2 | 725.3 | 485.6 | 306.2 | 228.0 | 209.6 | 204.5 | 213.1 | 210.6 |
| 17.5° | 1334.1 | 1258.4 | 966.6 | 647.1 | 370.1 | 232.6 | 210.1 | 207.5 | 213.7 | 218.8 | 220.3 |
| 20° | 1386.7 | 1277.9 | 928.2 | 524.4 | 277.0 | 213.1 | 205.0 | 199.9 | 211.1 | 226.4 | 223.4 |
| 22.5° | 1439.9 | 1311.1 | 883.3 | 429.4 | 222.9 | 203.9 | 199.3 | 195.3 | 203.9 | 218.8 | 222.3 |
| 25° | 1463.9 | 1364.2 | 833.2 | 335.3 | 207.0 | 193.2 | 190.1 | 191.7 | 198.8 | 212.1 | 210.6 |
| 27.5° | 1585.1 | 1370.4 | 737.6 | 264.8 | 200.4 | 185.5 | 185.5 | 189.1 | 189.1 | 207.0 | 205.5 |
| 30° | 1660.7 | 1474.1 | 659.9 | 222.9 | 192.7 | 174.8 | 180.9 | 182.5 | 179.9 | 199.3 | 200.9 |
| 32.5° | 1793.6 | 1502.8 | 584.2 | 204.5 | 180.4 | 173.3 | 172.3 | 173.3 | 175.3 | 194.2 | 194.7 |
| 35° | 1998.1 | 1643.8 | 481.0 | 197.3 | 174.3 | 165.6 | 158.5 | 164.1 | 169.2 | 183.0 | 185.5 |
| 37.5° | 2397.8 | 1788.5 | 392.0 | 191.7 | 171.2 | 158.5 | 155.9 | 154.9 | 164.1 | 179.9 | 185.0 |
| 40° | 2721.3 | 2044.6 | 319.0 | 187.1 | 165.1 | 154.4 | 147.7 | 148.2 | 156.4 | 168.2 | 175.8 |
| 42.5° | 3179.3 | 2229.6 | 270.4 | 179.9 | 156.4 | 145.7 | 138.0 | 142.6 | 146.2 | 158.5 | 163.6 |
| 45° | 3561.7 | 2373.2 | 238.2 | 175.3 | 147.7 | 137.5 | 131.4 | 136.5 | 132.9 | 139.0 | 146.2 |
| 47.5° | 3865.8 | 2498.5 | 214.2 | 164.1 | 142.1 | 132.9 | 125.2 | 123.7 | 117.6 | 119.1 | 125.7 |
| 50° | 4032.9 | 2477.5 | 194.2 | 152.8 | 134.9 | 128.3 | 117.6 | 106.8 | 98.7 | 98.1 | 102.2 |
| 52.5° | 4092.2 | 2365.6 | 177.9 | 143.1 | 126.3 | 118.1 | 105.8 | 91.0 | 82.8 | 80.2 | 83.8 |
| 55° | 4108.6 | 2204.6 | 163.1 | 132.4 | 118.1 | 105.3 | 92.5 | 76.7 | 68.0 | 63.9 | 67.5 |
| 57.5° | 4055.4 | 1956.7 | 148.7 | 122.2 | 108.4 | 93.0 | 79.2 | 62.9 | 54.7 | 49.6 | 52.6 |
| 60° | 3924.1 | 1641.8 | 136.0 | 109.4 | 98.1 | 82.3 | 67.0 | 50.6 | 41.9 | 37.3 | 38.8 |
| 62.5° | 3633.2 | 1287.1 | 122.2 | 97.6 | 87.4 | 72.1 | 56.2 | 39.9 | 31.7 | 27.6 | 28.1 |
| 65° | 3190.6 | 959.4 | 106.3 | 86.4 | 77.7 | 62.4 | 45.0 | 30.7 | 24.0 | 20.4 | 19.9 |
| 67.5° | 2541.9 | 650.2 | 90.5 | 74.6 | 69.0 | 52.6 | 35.8 | 24.0 | 18.9 | 16.4 | 15.3 |
| 70° | 1494.1 | 327.6 | 75.1 | 64.4 | 59.3 | 44.0 | 28.1 | 19.4 | 17.4 | 15.3 | 14.3 |
| 72.5° | 492.7 | 141.6 | 58.8 | 53.2 | 49.1 | 35.3 | 22.0 | 17.9 | 16.9 | 14.8 | 13.8 |
| 75° | 171.7 | 81.8 | 43.4 | 40.9 | 38.8 | 26.6 | 18.4 | 16.4 | 16.4 | 14.3 | 12.8 |
| 77.5° | 112.5 | 63.4 | 32.2 | 29.6 | 29.1 | 19.4 | 15.8 | 15.3 | 14.3 | 11.8 | 9.7 |
| 80° | 93.5 | 35.8 | 22.5 | 21.0 | 20.4 | 12.3 | 12.8 | 11.2 | 8.7 | 5.1 | 2.0 |
| 82.5° | 86.4 | 21.5 | 11.8 | 12.8 | 11.8 | 4.6 | 7.2 | 6.1 | 4.6 | 2.0 | 0.0 |
| 85° | 50.6 | 9.7 | 6.6 | 6.6 | 5.1 | 1.0 | 3.6 | 3.6 | 2.0 | 0.5 | 0.0 |
| 87.5° | 5.6 | 4.6 | 3.6 | 3.6 | 2.6 | 0.0 | 1.5 | 1.0 | 0.0 | 0.0 | 0.0 |
| 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)