

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: P367011

Luminaire Tested: **MSA-SA1D-727-U-T3-HSS**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P367011
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-11)
Test Lab: INNOVATION CENTER
Issue Date: 12/2/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: MSA-SA1D-727-U-T3-HSS
Description: MESA POST TOP DECORATIVE LUMINAIRE. (1) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4235 lumens
Efficiency: N/A
Efficacy: 63.2 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type III - Short
BUG Rating: B1 - U0 - G1

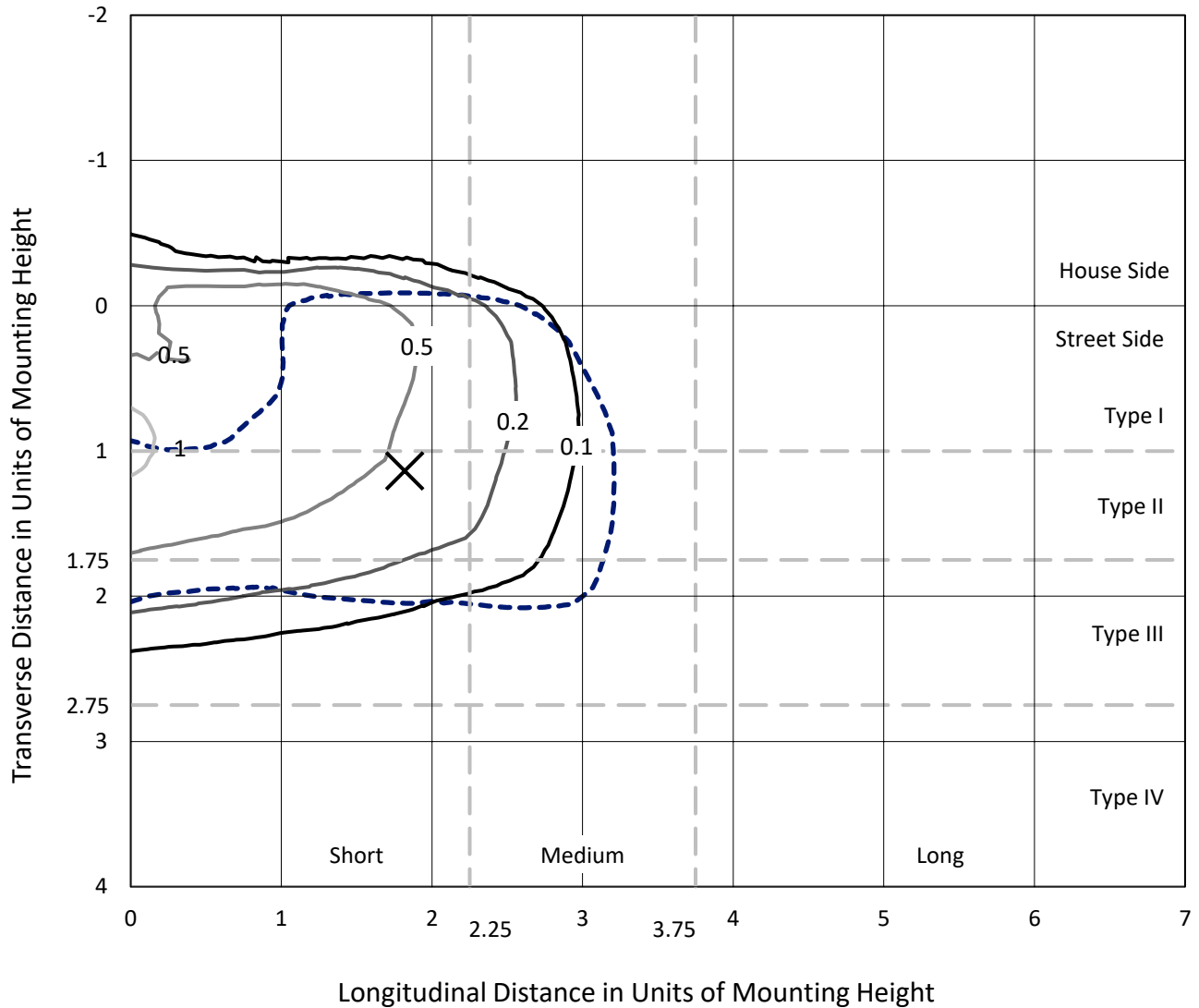
Input Watts (W): 67
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

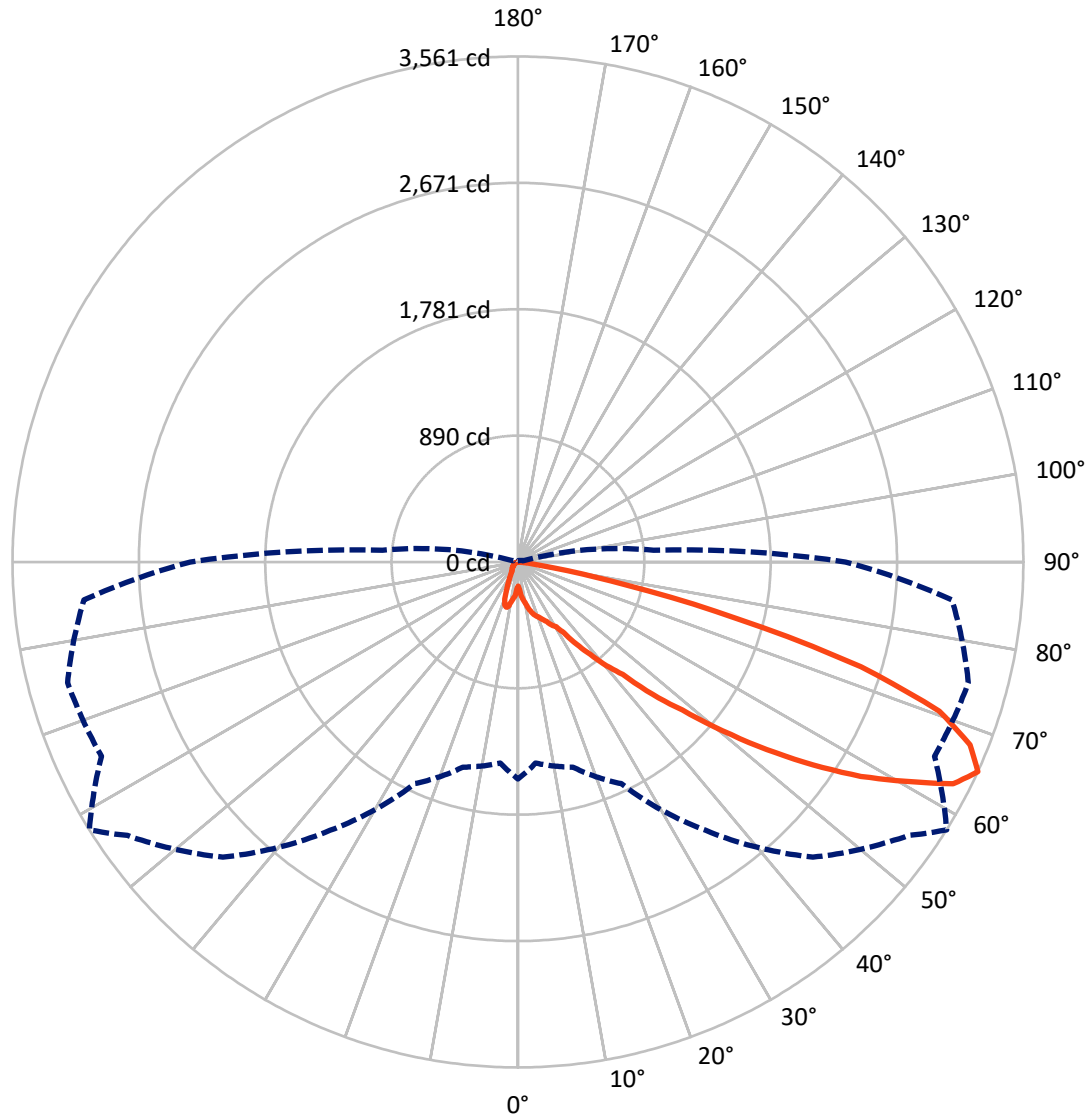
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 1.1 fc
 Type III - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 58-Deg Lateral - - - Horizontal Cone Through 65-Deg Vertical

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FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 417.9 | 0.0 | 417.9 |
| | % Fixture | 9.9 | 0.0 | 9.9 |
| Street Side | Lumens | 3817.1 | 0.0 | 3817.1 |
| | % Fixture | 90.1 | 0.0 | 90.1 |
| Total | Lumens | 4235.0 | 0.0 | 4235.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 23.8 | 0.6 |
| 10°-20° | 86.9 | 2.1 |
| 20°-30° | 168.3 | 4.0 |
| 30°-40° | 335.7 | 7.9 |
| 40°-50° | 686.3 | 16.2 |
| 50°-60° | 1217.4 | 28.7 |
| 60°-70° | 1283.4 | 30.3 |
| 70°-80° | 416.1 | 9.8 |
| 80°-90° | 17.0 | 0.4 |
| 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° | 4235.0 | 100.0 |
| 0°-180° | 4235.0 | 100.0 |

Coefficient of Utilization



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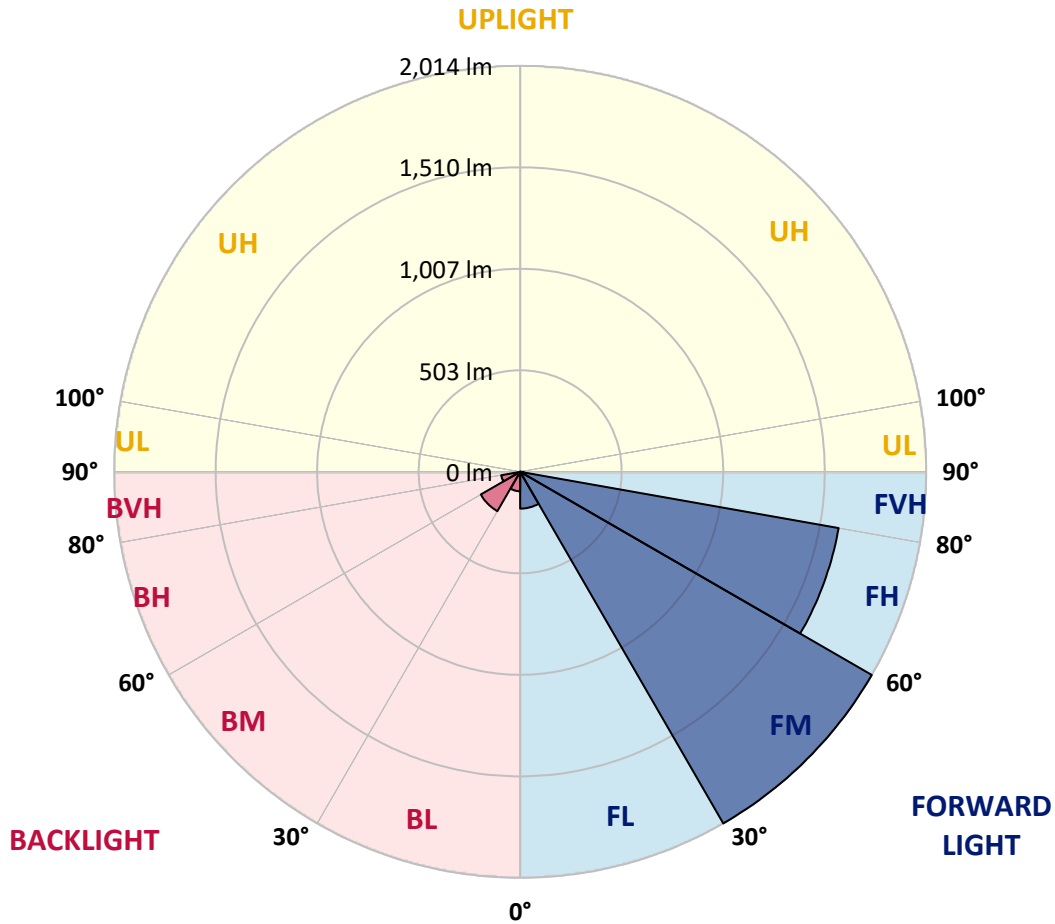
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 182.7 | 4.3 | | | |
| FM (30°-60°) | 2014.0 | 47.6 | | | |
| FH (60°-80°) | 1604.2 | 37.9 | | | G1/1800 |
| FVH (80°-90°) | 16.3 | 0.4 | | | G1/100 |
| BL (0°-30°) | 96.3 | 2.3 | B0/110 | | |
| BM (30°-60°) | 225.5 | 5.3 | B1/1000 | | |
| BH (60°-80°) | 95.4 | 2.3 | B0/110 | | G0/110 |
| BVH (80°-90°) | 0.7 | 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-G1

Type III Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 58° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 169.5 | 169.5 | 169.5 | 169.5 | 169.5 | 169.5 | 169.5 | 169.5 | 169.5 | 169.5 | 169.5 |
| 2.5° | 207.0 | 200.8 | 191.0 | 192.7 | 194.6 | 198.4 | 195.3 | 192.4 | 189.3 | 185.3 | 200.8 |
| 5° | 249.9 | 239.6 | 238.7 | 236.5 | 234.9 | 234.6 | 238.4 | 237.3 | 238.9 | 246.6 | 254.4 |
| 7.5° | 265.6 | 261.3 | 253.2 | 256.6 | 251.3 | 247.3 | 264.2 | 269.7 | 280.2 | 283.7 | 304.3 |
| 10° | 264.0 | 257.8 | 261.1 | 262.8 | 266.3 | 281.1 | 291.9 | 297.8 | 306.9 | 326.4 | 322.4 |
| 12.5° | 271.6 | 277.1 | 280.6 | 280.9 | 299.2 | 326.4 | 334.1 | 339.1 | 355.3 | 362.9 | 382.9 |
| 15° | 297.1 | 306.2 | 300.4 | 302.8 | 308.8 | 341.9 | 359.8 | 370.8 | 393.7 | 418.5 | 423.5 |
| 17.5° | 333.6 | 339.3 | 327.4 | 318.8 | 335.3 | 353.4 | 385.8 | 397.2 | 411.8 | 469.7 | 480.5 |
| 20° | 379.6 | 389.4 | 363.6 | 329.5 | 351.2 | 372.7 | 408.0 | 413.5 | 429.0 | 504.5 | 521.5 |
| 22.5° | 487.1 | 472.6 | 433.3 | 380.1 | 373.6 | 383.2 | 416.8 | 438.3 | 464.5 | 524.1 | 563.4 |
| 25° | 593.2 | 588.2 | 530.3 | 470.9 | 428.0 | 406.5 | 451.1 | 463.1 | 506.0 | 570.6 | 592.3 |
| 27.5° | 711.3 | 721.3 | 624.5 | 588.5 | 504.3 | 434.2 | 472.6 | 502.4 | 553.2 | 587.5 | 639.7 |
| 30° | 867.0 | 851.0 | 737.5 | 701.5 | 605.4 | 510.3 | 528.2 | 530.1 | 604.7 | 643.3 | 692.9 |
| 32.5° | 989.1 | 999.3 | 856.7 | 801.4 | 724.6 | 627.3 | 569.9 | 594.7 | 648.1 | 734.2 | 781.1 |
| 35° | 1121.2 | 1120.2 | 981.2 | 906.8 | 806.4 | 723.0 | 693.6 | 711.8 | 778.8 | 876.3 | 888.7 |
| 37.5° | 1318.6 | 1301.7 | 1137.6 | 1028.6 | 943.3 | 872.0 | 849.6 | 825.5 | 894.6 | 987.6 | 1034.1 |
| 40° | 1504.8 | 1446.4 | 1294.8 | 1165.5 | 1056.3 | 1027.2 | 946.1 | 960.9 | 981.4 | 1104.2 | 1232.8 |
| 42.5° | 1693.0 | 1656.7 | 1454.0 | 1345.8 | 1211.5 | 1142.4 | 1089.5 | 1082.5 | 1180.1 | 1325.5 | 1458.3 |
| 45° | 1941.2 | 1830.3 | 1668.2 | 1573.0 | 1417.5 | 1348.2 | 1305.5 | 1331.0 | 1418.7 | 1631.2 | 1719.7 |
| 47.5° | 2149.6 | 2047.5 | 1908.3 | 1763.8 | 1600.7 | 1678.6 | 1598.5 | 1558.2 | 1678.6 | 1898.3 | 2015.8 |
| 50° | 2328.6 | 2214.9 | 2074.0 | 1966.9 | 1940.5 | 2015.3 | 1853.2 | 1868.0 | 1946.2 | 2204.2 | 2270.5 |
| 52.5° | 2458.8 | 2339.1 | 2216.1 | 2164.4 | 2272.8 | 2310.5 | 2229.2 | 2196.5 | 2267.6 | 2465.0 | 2497.2 |
| 55° | 2556.8 | 2434.3 | 2338.2 | 2409.5 | 2619.3 | 2606.9 | 2635.5 | 2523.9 | 2591.9 | 2737.1 | 2721.8 |
| 57.5° | 2562.8 | 2417.6 | 2361.3 | 2476.0 | 2764.0 | 2956.0 | 3039.7 | 2849.9 | 2888.5 | 2949.8 | 2915.5 |
| 60° | 2375.4 | 2230.9 | 2226.4 | 2389.2 | 2806.0 | 3046.4 | 3229.5 | 3137.0 | 3085.2 | 3130.8 | 3065.7 |
| 62.5° | 2002.0 | 1900.9 | 1948.1 | 2128.1 | 2649.8 | 2996.5 | 3330.6 | 3441.9 | 3240.5 | 3250.7 | 3158.2 |
| 65° | 1528.7 | 1422.6 | 1496.5 | 1723.2 | 2308.4 | 2940.7 | 3359.2 | 3561.2 | 3237.6 | 3284.8 | 3069.5 |
| 67.5° | 1012.4 | 950.9 | 1034.6 | 1284.5 | 1835.3 | 2595.9 | 3344.4 | 3436.0 | 3134.8 | 3151.5 | 2740.2 |
| 70° | 522.7 | 507.6 | 575.4 | 772.6 | 1233.9 | 1994.3 | 3199.2 | 3149.1 | 2926.2 | 2714.9 | 2113.6 |
| 72.5° | 167.4 | 168.1 | 233.2 | 352.9 | 665.3 | 1214.2 | 2459.1 | 2527.7 | 2341.5 | 1986.0 | 1290.5 |
| 75° | 74.2 | 73.0 | 97.5 | 148.1 | 277.3 | 544.4 | 1527.7 | 1601.9 | 1457.8 | 1092.5 | 542.5 |
| 77.5° | 53.4 | 51.7 | 62.5 | 86.6 | 137.3 | 184.6 | 716.3 | 773.0 | 661.0 | 378.6 | 124.2 |
| 80° | 37.7 | 37.4 | 45.3 | 60.8 | 85.8 | 82.0 | 226.3 | 253.7 | 203.2 | 91.8 | 36.5 |
| 82.5° | 21.2 | 21.9 | 31.5 | 42.9 | 52.2 | 41.0 | 63.7 | 70.1 | 68.4 | 48.9 | 16.0 |
| 85° | 10.3 | 11.4 | 20.5 | 31.0 | 27.4 | 16.0 | 22.7 | 24.6 | 28.6 | 28.4 | 8.1 |
| 87.5° | 0.0 | 0.0 | 8.3 | 14.1 | 7.4 | 2.4 | 6.9 | 7.9 | 7.6 | 9.1 | 1.9 |
| 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° | 169.5 | 169.5 | 169.5 | 169.5 | 169.5 | 169.5 | 169.5 | 169.5 | 169.5 | 169.5 | 169.5 |
| 2.5° | 203.9 | 202.4 | 184.3 | 185.7 | 189.8 | 188.1 | 189.6 | 186.2 | 182.4 | 197.9 | 197.7 |
| 5° | 257.8 | 247.0 | 241.3 | 236.1 | 237.0 | 226.3 | 232.5 | 235.3 | 234.9 | 243.7 | 246.1 |
| 7.5° | 305.0 | 290.7 | 279.2 | 268.2 | 251.6 | 236.5 | 245.8 | 251.8 | 255.9 | 271.1 | 277.1 |
| 10° | 327.1 | 315.5 | 310.9 | 289.5 | 277.5 | 268.2 | 257.0 | 248.9 | 252.3 | 248.2 | 252.3 |
| 12.5° | 375.8 | 367.9 | 350.5 | 328.8 | 314.5 | 295.4 | 253.7 | 218.9 | 197.4 | 197.7 | 196.2 |
| 15° | 420.1 | 419.7 | 393.7 | 357.7 | 316.2 | 261.8 | 196.7 | 152.8 | 132.6 | 126.9 | 124.9 |
| 17.5° | 478.1 | 470.9 | 423.5 | 370.3 | 295.7 | 202.7 | 134.0 | 104.7 | 102.8 | 106.1 | 104.7 |
| 20° | 515.0 | 504.5 | 438.3 | 351.9 | 243.7 | 137.1 | 101.1 | 92.8 | 98.5 | 103.2 | 102.1 |
| 22.5° | 552.0 | 536.3 | 449.5 | 329.5 | 173.3 | 100.4 | 91.3 | 89.9 | 93.5 | 99.4 | 100.4 |
| 25° | 572.3 | 569.2 | 471.4 | 287.6 | 118.7 | 88.0 | 88.0 | 87.5 | 88.7 | 93.0 | 92.3 |
| 27.5° | 631.2 | 589.2 | 455.0 | 224.4 | 91.8 | 80.8 | 82.0 | 81.5 | 77.3 | 81.5 | 81.8 |
| 30° | 667.9 | 648.6 | 456.1 | 159.8 | 80.8 | 71.5 | 74.6 | 70.8 | 64.4 | 68.0 | 67.2 |
| 32.5° | 741.8 | 693.6 | 452.6 | 107.8 | 73.7 | 68.2 | 63.4 | 57.9 | 53.2 | 54.6 | 53.4 |
| 35° | 827.9 | 791.2 | 404.2 | 86.6 | 68.7 | 60.3 | 52.7 | 47.2 | 42.2 | 43.4 | 43.2 |
| 37.5° | 999.1 | 882.5 | 364.1 | 78.0 | 65.3 | 55.3 | 46.5 | 38.9 | 36.2 | 37.0 | 37.7 |
| 40° | 1157.6 | 1034.8 | 289.5 | 74.2 | 59.6 | 49.4 | 38.4 | 32.9 | 31.2 | 31.7 | 32.4 |
| 42.5° | 1394.7 | 1156.0 | 218.7 | 70.3 | 53.9 | 41.7 | 32.0 | 28.4 | 26.7 | 27.7 | 28.1 |
| 45° | 1624.0 | 1259.0 | 163.3 | 67.0 | 49.1 | 36.0 | 26.9 | 24.6 | 22.7 | 23.4 | 24.3 |
| 47.5° | 1853.2 | 1373.4 | 121.8 | 61.8 | 43.9 | 31.0 | 23.1 | 21.5 | 20.3 | 20.5 | 21.7 |
| 50° | 2058.2 | 1426.8 | 95.9 | 55.3 | 39.6 | 26.9 | 21.0 | 19.3 | 18.8 | 19.1 | 20.0 |
| 52.5° | 2208.9 | 1427.3 | 80.8 | 49.6 | 35.5 | 23.8 | 19.8 | 17.9 | 17.6 | 18.1 | 19.1 |
| 55° | 2345.1 | 1389.2 | 70.1 | 44.6 | 32.0 | 21.7 | 18.8 | 17.2 | 17.2 | 17.6 | 18.6 |
| 57.5° | 2435.5 | 1319.1 | 60.8 | 39.3 | 28.9 | 20.5 | 18.1 | 16.5 | 16.2 | 16.0 | 16.7 |
| 60° | 2479.6 | 1223.5 | 51.5 | 34.6 | 26.0 | 19.8 | 17.6 | 14.5 | 14.3 | 13.8 | 14.3 |
| 62.5° | 2451.7 | 1103.8 | 43.2 | 29.8 | 23.1 | 18.8 | 15.5 | 12.6 | 12.2 | 11.2 | 11.9 |
| 65° | 2309.1 | 958.3 | 36.5 | 25.5 | 20.0 | 16.0 | 13.1 | 10.7 | 9.5 | 8.3 | 8.1 |
| 67.5° | 2017.5 | 778.5 | 30.5 | 21.9 | 17.2 | 13.1 | 10.7 | 9.5 | 7.4 | 6.4 | 6.2 |
| 70° | 1512.0 | 531.5 | 25.3 | 18.8 | 14.3 | 11.2 | 9.1 | 8.6 | 6.9 | 6.2 | 5.7 |
| 72.5° | 887.0 | 286.8 | 21.2 | 16.5 | 12.2 | 9.3 | 7.4 | 7.9 | 6.9 | 5.7 | 5.2 |
| 75° | 354.3 | 95.4 | 16.9 | 13.1 | 9.8 | 6.7 | 6.2 | 6.4 | 6.2 | 5.2 | 4.3 |
| 77.5° | 80.8 | 30.0 | 13.1 | 10.3 | 7.6 | 4.3 | 5.0 | 5.5 | 5.5 | 4.3 | 3.1 |
| 80° | 25.3 | 11.9 | 7.6 | 6.4 | 5.5 | 2.4 | 3.6 | 3.8 | 2.6 | 1.2 | 0.0 |
| 82.5° | 8.1 | 3.3 | 2.6 | 2.6 | 2.4 | 0.5 | 0.7 | 0.5 | 0.0 | 0.0 | 0.0 |
| 85° | 3.1 | 2.1 | 1.7 | 1.7 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 1.2 | 1.0 | 0.7 | 1.0 | 0.5 | 0.0 | 0.0 | 0.0 | 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)