

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: P367407

Luminaire Tested: **MSA-SA2C-727-U-T3-HSS**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P367407
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-SA2C-727-U-T3-HSS
Description: MESA POST TOP DECORATIVE LUMINAIRE. (2) 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: 7619 lumens
Efficiency: N/A
Efficacy: 67.4 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type III - Short
BUG Rating: B1 - U0 - G2

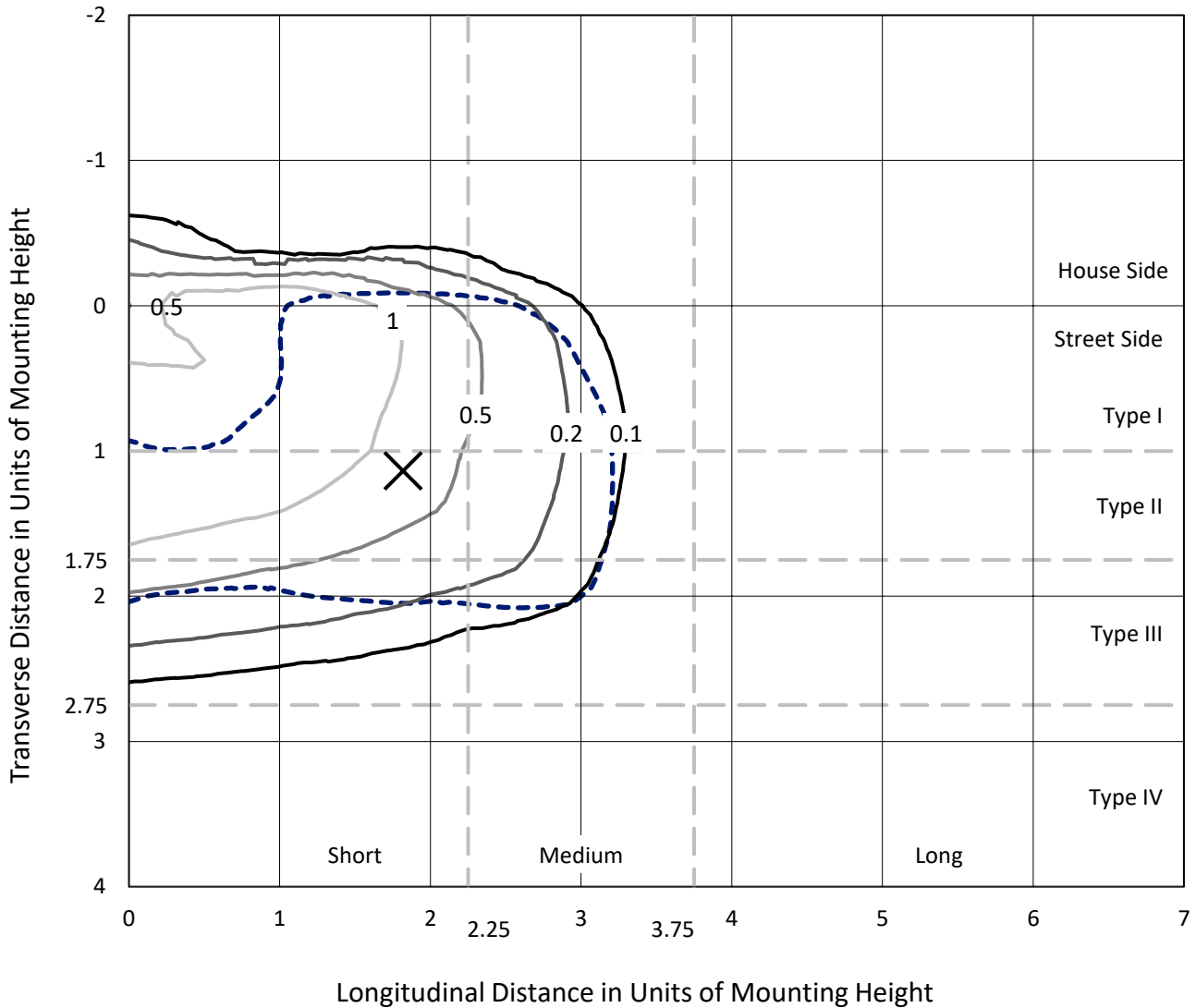
Input Watts (W): 113
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

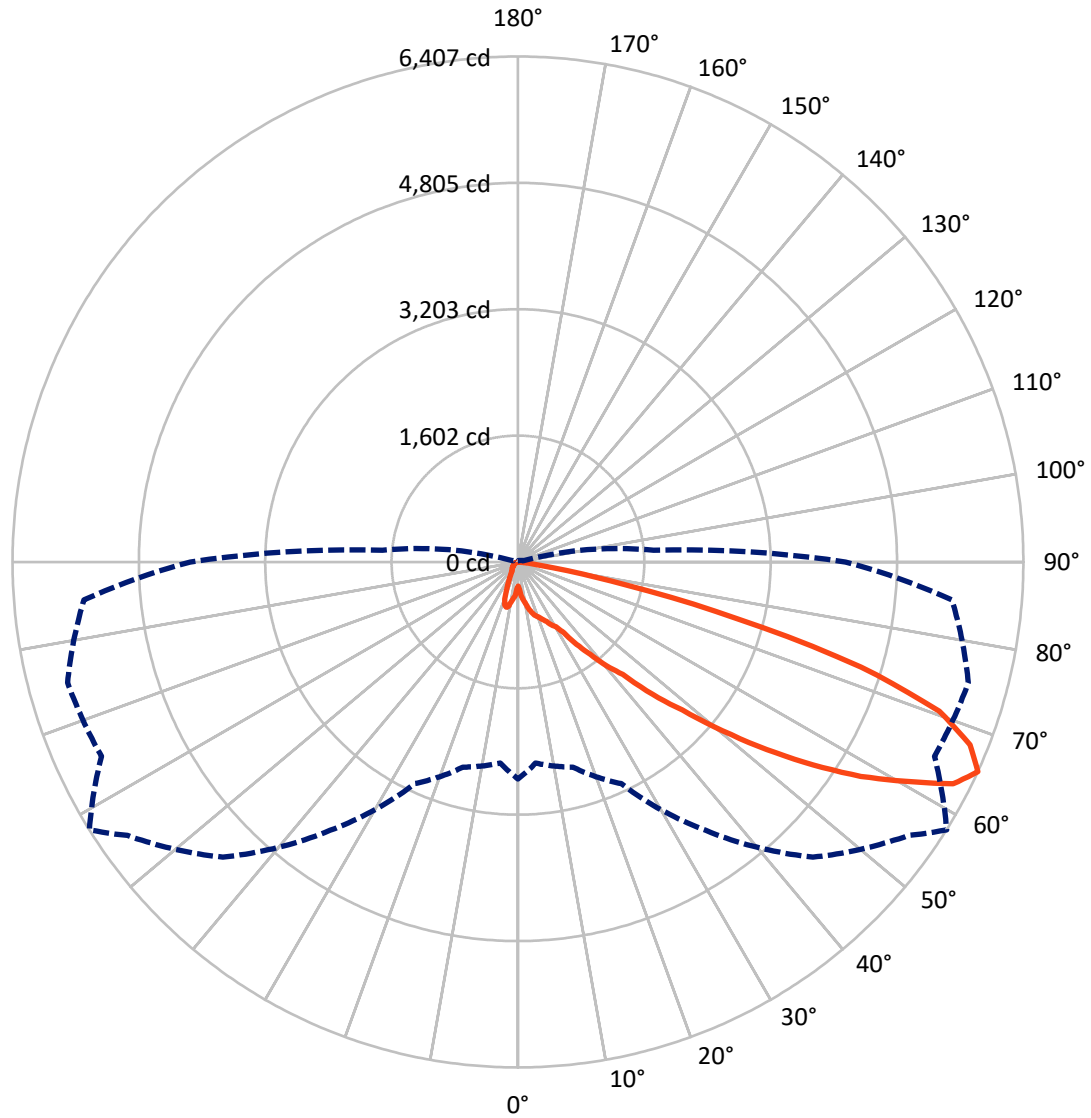
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 2 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 | 751.8 | 0.0 | 751.8 |
| | % Fixture | 9.9 | 0.0 | 9.9 |
| Street Side | Lumens | 6867.2 | 0.0 | 6867.2 |
| | % Fixture | 90.1 | 0.0 | 90.1 |
| Total | Lumens | 7619.0 | 0.0 | 7619.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 42.9 | 0.6 |
| 10°-20° | 156.4 | 2.1 |
| 20°-30° | 302.7 | 4.0 |
| 30°-40° | 604.0 | 7.9 |
| 40°-50° | 1234.8 | 16.2 |
| 50°-60° | 2190.1 | 28.7 |
| 60°-70° | 2309.0 | 30.3 |
| 70°-80° | 748.6 | 9.8 |
| 80°-90° | 30.6 | 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° | 7619.0 | 100.0 |
| 0°-180° | 7619.0 | 100.0 |

Coefficient of Utilization



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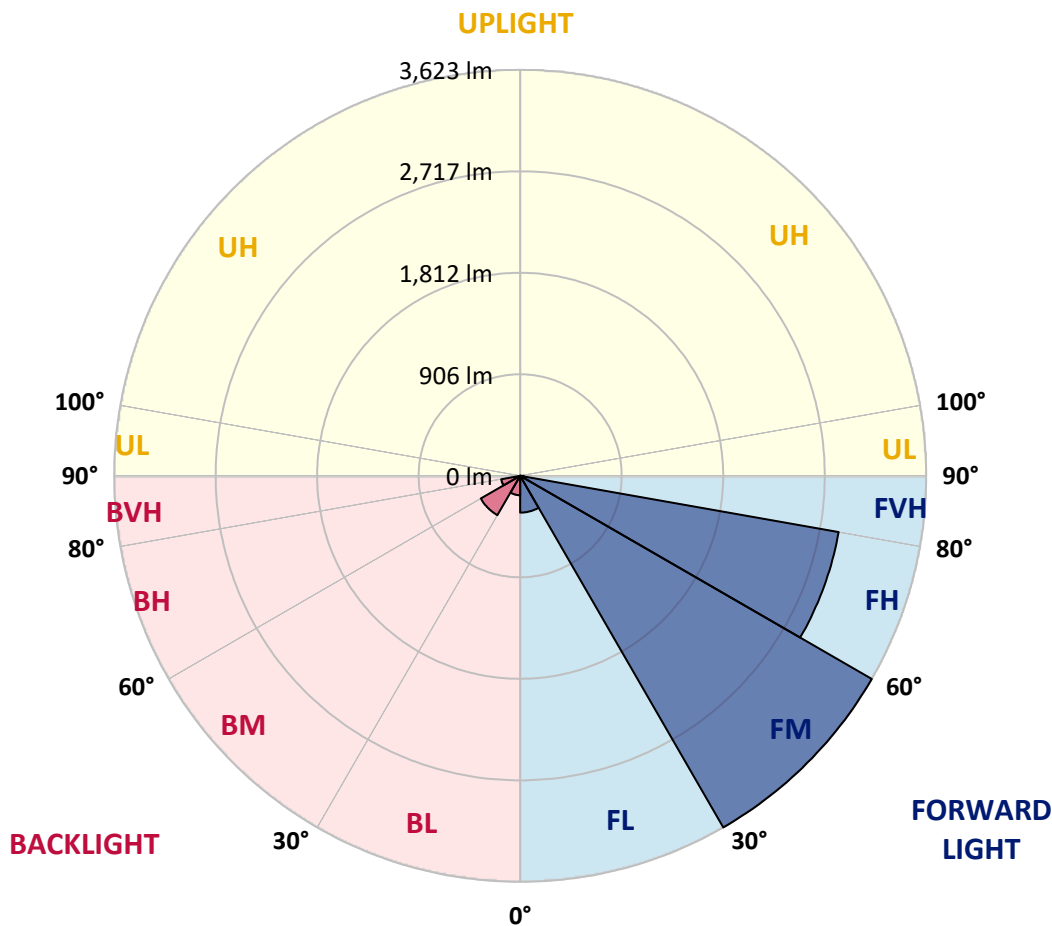
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 328.7 | 4.3 | | | |
| FM (30°-60°) | 3623.2 | 47.6 | | | |
| FH (60°-80°) | 2886.0 | 37.9 | | | G2/5000 |
| FVH (80°-90°) | 29.3 | 0.4 | | | G1/100 |
| BL (0°-30°) | 173.3 | 2.3 | B1/500 | | |
| BM (30°-60°) | 405.6 | 5.3 | B1/1000 | | |
| BH (60°-80°) | 171.6 | 2.3 | B1/500 | | G1/500 |
| BVH (80°-90°) | 1.3 | 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 III Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 58° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 305.0 | 305.0 | 305.0 | 305.0 | 305.0 | 305.0 | 305.0 | 305.0 | 305.0 | 305.0 | 305.0 |
| 2.5° | 372.3 | 361.2 | 343.6 | 346.6 | 350.0 | 356.9 | 351.3 | 346.2 | 340.6 | 333.3 | 361.2 |
| 5° | 449.6 | 431.1 | 429.4 | 425.5 | 422.5 | 422.1 | 429.0 | 426.8 | 429.8 | 443.6 | 457.7 |
| 7.5° | 477.9 | 470.2 | 455.6 | 461.6 | 452.1 | 444.8 | 475.3 | 485.2 | 504.0 | 510.5 | 547.4 |
| 10° | 474.9 | 463.7 | 469.7 | 472.7 | 479.2 | 505.8 | 525.1 | 535.8 | 552.1 | 587.3 | 580.0 |
| 12.5° | 488.6 | 498.5 | 504.9 | 505.3 | 538.4 | 587.3 | 601.0 | 610.0 | 639.2 | 652.9 | 688.9 |
| 15° | 534.5 | 550.8 | 540.5 | 544.8 | 555.5 | 615.1 | 647.3 | 667.1 | 708.2 | 752.8 | 761.9 |
| 17.5° | 600.1 | 610.4 | 589.0 | 573.5 | 603.1 | 635.7 | 694.1 | 714.7 | 740.8 | 845.1 | 864.4 |
| 20° | 682.9 | 700.5 | 654.2 | 592.8 | 631.9 | 670.5 | 734.0 | 743.8 | 771.7 | 907.7 | 938.2 |
| 22.5° | 876.4 | 850.2 | 779.4 | 683.8 | 672.2 | 689.4 | 749.8 | 788.5 | 835.6 | 942.9 | 1013.7 |
| 25° | 1067.3 | 1058.3 | 954.0 | 847.2 | 770.0 | 731.4 | 811.6 | 833.1 | 910.3 | 1026.5 | 1065.6 |
| 27.5° | 1279.6 | 1297.6 | 1123.5 | 1058.7 | 907.3 | 781.2 | 850.2 | 903.8 | 995.2 | 1057.0 | 1150.9 |
| 30° | 1559.7 | 1531.0 | 1326.8 | 1262.0 | 1089.2 | 918.0 | 950.2 | 953.6 | 1087.9 | 1157.4 | 1246.6 |
| 32.5° | 1779.4 | 1797.8 | 1541.3 | 1441.8 | 1303.7 | 1128.6 | 1025.2 | 1069.9 | 1166.0 | 1320.8 | 1405.3 |
| 35° | 2017.0 | 2015.3 | 1765.2 | 1631.4 | 1450.8 | 1300.6 | 1247.9 | 1280.5 | 1401.0 | 1576.5 | 1598.8 |
| 37.5° | 2372.2 | 2341.8 | 2046.6 | 1850.6 | 1697.0 | 1568.8 | 1528.4 | 1485.1 | 1609.5 | 1776.8 | 1860.5 |
| 40° | 2707.3 | 2602.2 | 2329.3 | 2096.8 | 1900.4 | 1848.0 | 1702.2 | 1728.8 | 1765.7 | 1986.6 | 2217.8 |
| 42.5° | 3045.7 | 2980.5 | 2615.9 | 2421.1 | 2179.6 | 2055.2 | 1960.0 | 1947.5 | 2123.0 | 2384.7 | 2623.6 |
| 45° | 3492.3 | 3292.8 | 3001.1 | 2829.9 | 2550.2 | 2425.4 | 2348.6 | 2394.5 | 2552.4 | 2934.6 | 3093.8 |
| 47.5° | 3867.2 | 3683.6 | 3433.1 | 3173.1 | 2879.7 | 3020.0 | 2875.8 | 2803.3 | 3020.0 | 3415.1 | 3626.5 |
| 50° | 4189.4 | 3984.7 | 3731.2 | 3538.6 | 3491.0 | 3625.7 | 3334.0 | 3360.6 | 3501.3 | 3965.4 | 4084.7 |
| 52.5° | 4423.6 | 4208.2 | 3986.9 | 3893.8 | 4089.0 | 4156.8 | 4010.5 | 3951.7 | 4079.5 | 4434.7 | 4492.6 |
| 55° | 4599.9 | 4379.4 | 4206.5 | 4334.8 | 4712.3 | 4690.0 | 4741.4 | 4540.7 | 4662.9 | 4924.2 | 4896.7 |
| 57.5° | 4610.6 | 4349.4 | 4248.1 | 4454.5 | 4972.7 | 5318.0 | 5468.6 | 5127.1 | 5196.6 | 5306.8 | 5245.1 |
| 60° | 4273.4 | 4013.5 | 4005.3 | 4298.3 | 5048.2 | 5480.6 | 5810.0 | 5643.6 | 5550.5 | 5632.4 | 5515.3 |
| 62.5° | 3601.7 | 3419.8 | 3504.7 | 3828.6 | 4767.2 | 5390.9 | 5991.9 | 6192.2 | 5829.8 | 5848.2 | 5681.8 |
| 65° | 2750.2 | 2559.3 | 2692.2 | 3100.2 | 4152.9 | 5290.5 | 6043.4 | 6406.7 | 5824.6 | 5909.5 | 5522.2 |
| 67.5° | 1821.4 | 1710.7 | 1861.3 | 2310.9 | 3301.8 | 4670.2 | 6016.8 | 6181.5 | 5639.7 | 5669.7 | 4929.8 |
| 70° | 940.3 | 913.3 | 1035.1 | 1389.9 | 2219.9 | 3587.9 | 5755.5 | 5665.5 | 5264.4 | 4884.3 | 3802.4 |
| 72.5° | 301.1 | 302.4 | 419.5 | 634.9 | 1196.8 | 2184.3 | 4424.0 | 4547.6 | 4212.5 | 3572.9 | 2321.6 |
| 75° | 133.4 | 131.3 | 175.5 | 266.4 | 498.9 | 979.3 | 2748.4 | 2881.8 | 2622.7 | 1965.6 | 975.9 |
| 77.5° | 96.1 | 93.1 | 112.4 | 155.7 | 247.1 | 332.0 | 1288.6 | 1390.7 | 1189.1 | 681.2 | 223.5 |
| 80° | 67.8 | 67.3 | 81.5 | 109.4 | 154.4 | 147.6 | 407.1 | 456.4 | 365.5 | 165.2 | 65.6 |
| 82.5° | 38.2 | 39.5 | 56.6 | 77.2 | 93.9 | 73.8 | 114.5 | 126.1 | 123.1 | 87.9 | 28.7 |
| 85° | 18.4 | 20.6 | 36.9 | 55.8 | 49.3 | 28.7 | 40.8 | 44.2 | 51.5 | 51.0 | 14.6 |
| 87.5° | 0.0 | 0.0 | 15.0 | 25.3 | 13.3 | 4.3 | 12.4 | 14.2 | 13.7 | 16.3 | 3.4 |
| 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° | 305.0 | 305.0 | 305.0 | 305.0 | 305.0 | 305.0 | 305.0 | 305.0 | 305.0 | 305.0 | 305.0 |
| 2.5° | 366.8 | 364.2 | 331.6 | 334.2 | 341.5 | 338.5 | 341.0 | 335.0 | 328.2 | 356.0 | 355.6 |
| 5° | 463.7 | 444.4 | 434.1 | 424.7 | 426.4 | 407.1 | 418.2 | 423.4 | 422.5 | 438.4 | 442.7 |
| 7.5° | 548.7 | 522.9 | 502.3 | 482.6 | 452.6 | 425.5 | 442.3 | 453.0 | 460.3 | 487.7 | 498.5 |
| 10° | 588.6 | 567.5 | 559.4 | 520.8 | 499.3 | 482.6 | 462.4 | 447.8 | 453.9 | 446.6 | 453.9 |
| 12.5° | 676.1 | 661.9 | 630.6 | 591.6 | 565.8 | 531.5 | 456.4 | 393.8 | 355.2 | 355.6 | 353.0 |
| 15° | 755.9 | 755.0 | 708.2 | 643.5 | 568.8 | 471.0 | 353.9 | 275.0 | 238.5 | 228.2 | 224.8 |
| 17.5° | 860.1 | 847.2 | 761.9 | 666.2 | 531.9 | 364.6 | 241.1 | 188.3 | 184.9 | 190.9 | 188.3 |
| 20° | 926.6 | 907.7 | 788.5 | 633.2 | 438.4 | 246.7 | 181.9 | 166.9 | 177.2 | 185.7 | 183.6 |
| 22.5° | 993.1 | 964.8 | 808.6 | 592.8 | 311.9 | 180.6 | 164.3 | 161.7 | 168.2 | 178.9 | 180.6 |
| 25° | 1029.5 | 1024.0 | 848.1 | 517.3 | 213.6 | 158.3 | 158.3 | 157.4 | 159.6 | 167.3 | 166.0 |
| 27.5° | 1135.5 | 1060.0 | 818.5 | 403.7 | 165.2 | 145.4 | 147.6 | 146.7 | 139.0 | 146.7 | 147.1 |
| 30° | 1201.6 | 1166.8 | 820.6 | 287.4 | 145.4 | 128.7 | 134.3 | 127.4 | 115.8 | 122.3 | 121.0 |
| 32.5° | 1334.5 | 1247.9 | 814.2 | 193.9 | 132.6 | 122.7 | 114.1 | 104.2 | 95.7 | 98.2 | 96.1 |
| 35° | 1489.4 | 1423.3 | 727.1 | 155.7 | 123.5 | 108.5 | 94.8 | 84.9 | 75.9 | 78.1 | 77.6 |
| 37.5° | 1797.4 | 1587.6 | 655.0 | 140.3 | 117.5 | 99.5 | 83.6 | 69.9 | 65.2 | 66.5 | 67.8 |
| 40° | 2082.7 | 1861.7 | 520.8 | 133.4 | 107.2 | 88.8 | 69.1 | 59.2 | 56.2 | 57.1 | 58.3 |
| 42.5° | 2509.1 | 2079.7 | 393.4 | 126.5 | 96.9 | 75.1 | 57.5 | 51.0 | 48.0 | 49.8 | 50.6 |
| 45° | 2921.7 | 2265.0 | 293.8 | 120.5 | 88.4 | 64.8 | 48.5 | 44.2 | 40.8 | 42.0 | 43.8 |
| 47.5° | 3334.0 | 2470.9 | 219.2 | 111.1 | 78.9 | 55.8 | 41.6 | 38.6 | 36.5 | 36.9 | 39.0 |
| 50° | 3702.9 | 2567.0 | 172.4 | 99.5 | 71.2 | 48.5 | 37.7 | 34.7 | 33.9 | 34.3 | 36.0 |
| 52.5° | 3974.0 | 2567.8 | 145.4 | 89.2 | 63.9 | 42.9 | 35.6 | 32.2 | 31.7 | 32.6 | 34.3 |
| 55° | 4219.0 | 2499.2 | 126.1 | 80.2 | 57.5 | 39.0 | 33.9 | 30.9 | 30.9 | 31.7 | 33.5 |
| 57.5° | 4381.5 | 2373.1 | 109.4 | 70.8 | 51.9 | 36.9 | 32.6 | 29.6 | 29.2 | 28.7 | 30.0 |
| 60° | 4460.9 | 2201.1 | 92.7 | 62.2 | 46.8 | 35.6 | 31.7 | 26.2 | 25.7 | 24.9 | 25.7 |
| 62.5° | 4410.7 | 1985.7 | 77.6 | 53.6 | 41.6 | 33.9 | 27.9 | 22.7 | 21.9 | 20.2 | 21.4 |
| 65° | 4154.2 | 1724.0 | 65.6 | 45.9 | 36.0 | 28.7 | 23.6 | 19.3 | 17.2 | 15.0 | 14.6 |
| 67.5° | 3629.5 | 1400.6 | 54.9 | 39.5 | 30.9 | 23.6 | 19.3 | 17.2 | 13.3 | 11.6 | 11.2 |
| 70° | 2720.1 | 956.2 | 45.5 | 33.9 | 25.7 | 20.2 | 16.3 | 15.4 | 12.4 | 11.2 | 10.3 |
| 72.5° | 1595.8 | 516.1 | 38.2 | 29.6 | 21.9 | 16.7 | 13.3 | 14.2 | 12.4 | 10.3 | 9.4 |
| 75° | 637.5 | 171.6 | 30.5 | 23.6 | 17.6 | 12.0 | 11.2 | 11.6 | 11.2 | 9.4 | 7.7 |
| 77.5° | 145.4 | 54.1 | 23.6 | 18.4 | 13.7 | 7.7 | 9.0 | 9.9 | 9.9 | 7.7 | 5.6 |
| 80° | 45.5 | 21.4 | 13.7 | 11.6 | 9.9 | 4.3 | 6.4 | 6.9 | 4.7 | 2.1 | 0.0 |
| 82.5° | 14.6 | 6.0 | 4.7 | 4.7 | 4.3 | 0.9 | 1.3 | 0.9 | 0.0 | 0.0 | 0.0 |
| 85° | 5.6 | 3.9 | 3.0 | 3.0 | 1.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 2.1 | 1.7 | 1.3 | 1.7 | 0.9 | 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)