

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: P367231

Luminaire Tested: **MSA-SA2A-760-U-T3-HSS**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P367231
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-SA2A-760-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: 5870 lumens
Efficiency: N/A
Efficacy: 88.9 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type III - Short
BUG Rating: B1 - U0 - G2

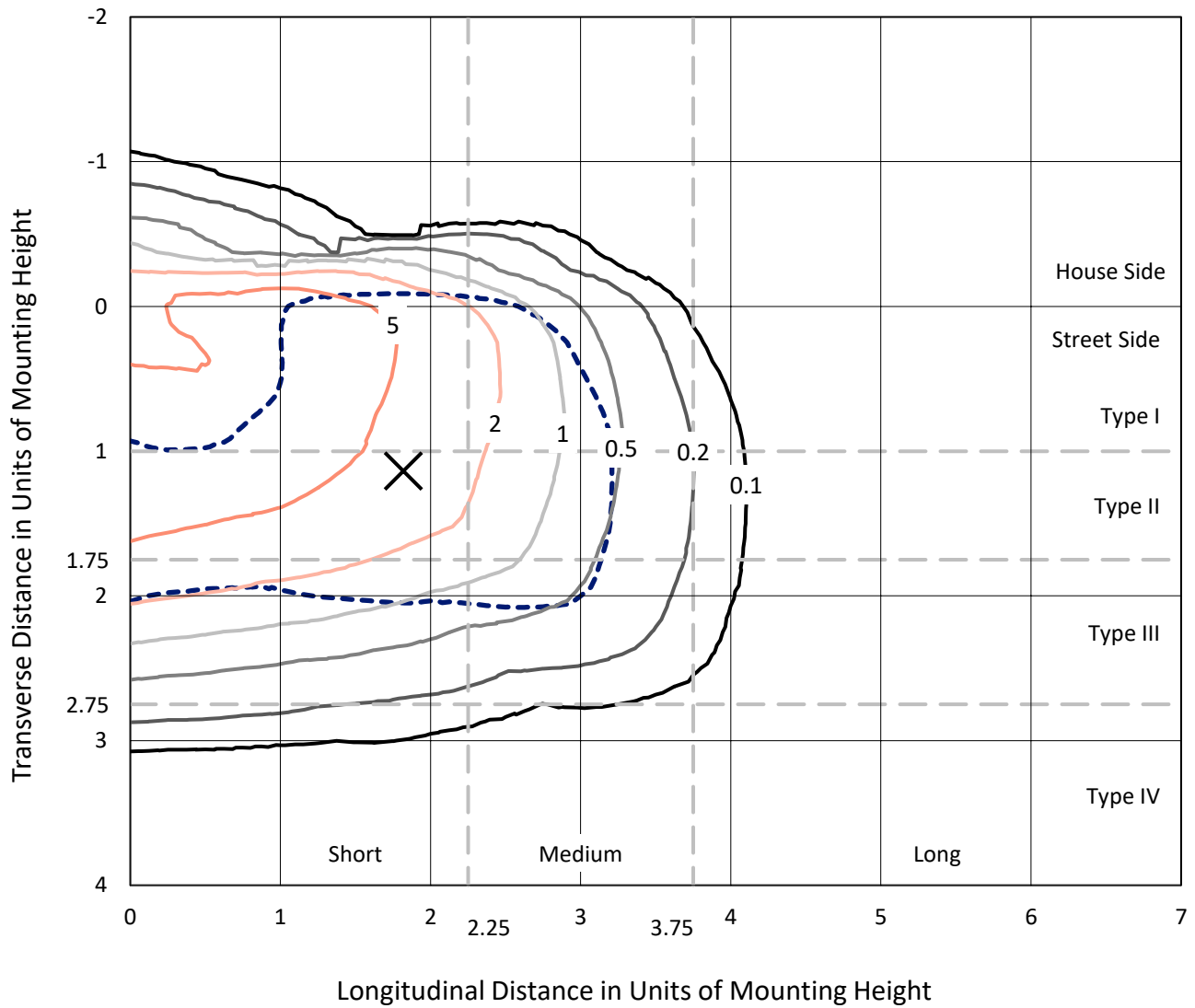
Input Watts (W): 66
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Iso-Footcandle Lines of Horizontal Illumination

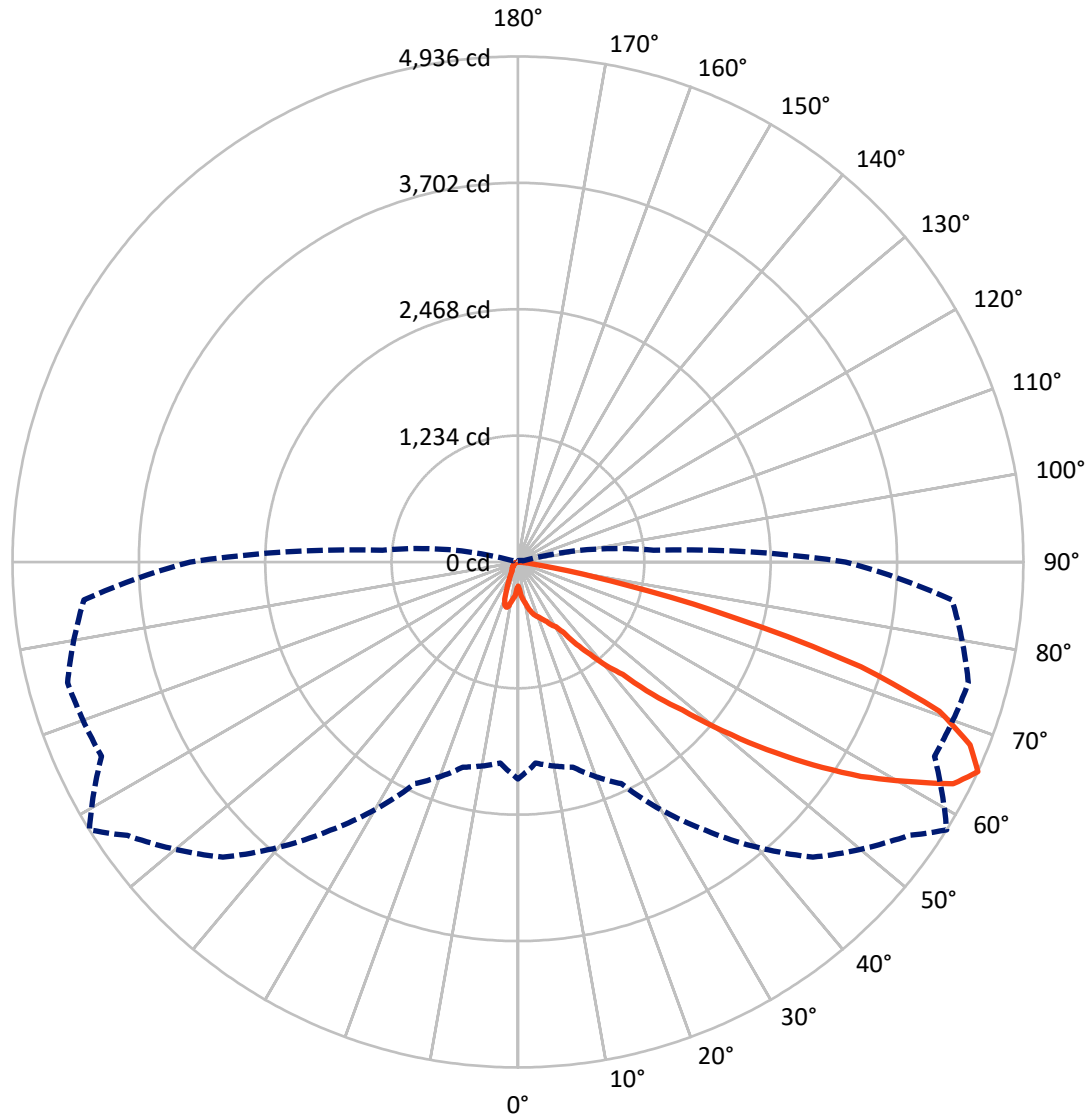
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 9.5 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 | 579.2 | 0.0 | 579.2 |
| | % Fixture | 9.9 | 0.0 | 9.9 |
| Street Side | Lumens | 5290.8 | 0.0 | 5290.8 |
| | % Fixture | 90.1 | 0.0 | 90.1 |
| Total | Lumens | 5870.0 | 0.0 | 5870.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 33.0 | 0.6 |
| 10°-20° | 120.5 | 2.1 |
| 20°-30° | 233.2 | 4.0 |
| 30°-40° | 465.3 | 7.9 |
| 40°-50° | 951.3 | 16.2 |
| 50°-60° | 1687.3 | 28.7 |
| 60°-70° | 1778.9 | 30.3 |
| 70°-80° | 576.7 | 9.8 |
| 80°-90° | 23.6 | 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° | 5870.0 | 100.0 |
| 0°-180° | 5870.0 | 100.0 |

Coefficient of Utilization



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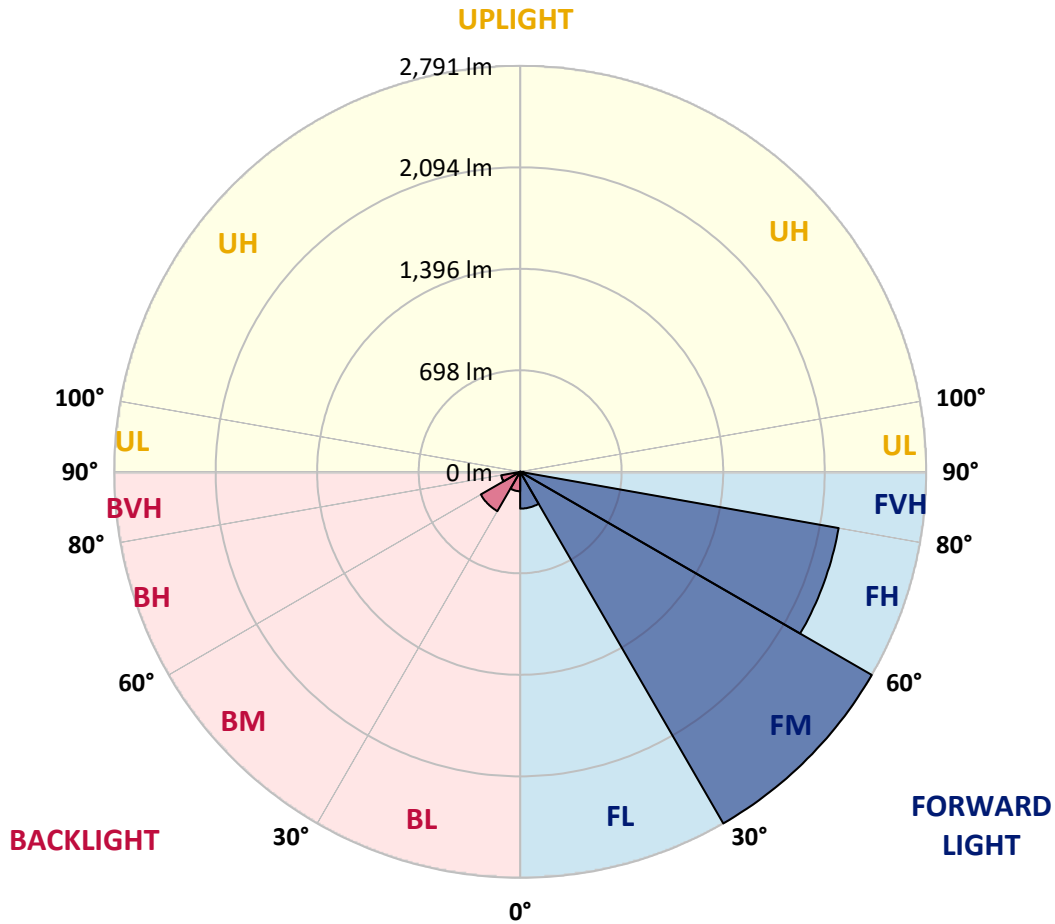
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 253.2 | 4.3 | | | |
| FM (30°-60°) | 2791.5 | 47.6 | | | |
| FH (60°-80°) | 2223.5 | 37.9 | | | G2/5000 |
| FVH (80°-90°) | 22.6 | 0.4 | | | G1/100 |
| BL (0°-30°) | 133.5 | 2.3 | B1/500 | | |
| BM (30°-60°) | 312.5 | 5.3 | B1/1000 | | |
| BH (60°-80°) | 132.2 | 2.3 | B1/500 | | G1/500 |
| BVH (80°-90°) | 1.0 | 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° | 235.0 | 235.0 | 235.0 | 235.0 | 235.0 | 235.0 | 235.0 | 235.0 | 235.0 | 235.0 | 235.0 |
| 2.5° | 286.9 | 278.3 | 264.7 | 267.0 | 269.7 | 275.0 | 270.7 | 266.7 | 262.4 | 256.8 | 278.3 |
| 5° | 346.4 | 332.2 | 330.8 | 327.9 | 325.5 | 325.2 | 330.5 | 328.8 | 331.2 | 341.7 | 352.6 |
| 7.5° | 368.2 | 362.2 | 351.0 | 355.6 | 348.3 | 342.7 | 366.2 | 373.8 | 388.3 | 393.3 | 421.7 |
| 10° | 365.9 | 357.3 | 361.9 | 364.2 | 369.2 | 389.7 | 404.5 | 412.8 | 425.4 | 452.5 | 446.8 |
| 12.5° | 376.4 | 384.0 | 389.0 | 389.3 | 414.8 | 452.5 | 463.0 | 470.0 | 492.4 | 503.0 | 530.8 |
| 15° | 411.8 | 424.4 | 416.4 | 419.7 | 428.0 | 473.9 | 498.7 | 513.9 | 545.7 | 580.0 | 587.0 |
| 17.5° | 462.4 | 470.3 | 453.8 | 441.9 | 464.7 | 489.8 | 534.7 | 550.6 | 570.8 | 651.1 | 666.0 |
| 20° | 526.2 | 539.7 | 504.0 | 456.8 | 486.8 | 516.6 | 565.5 | 573.1 | 594.6 | 699.3 | 722.8 |
| 22.5° | 675.2 | 655.1 | 600.5 | 526.8 | 517.9 | 531.1 | 577.7 | 607.5 | 643.8 | 726.4 | 781.0 |
| 25° | 822.3 | 815.3 | 735.0 | 652.7 | 593.2 | 563.5 | 625.3 | 641.8 | 701.3 | 790.9 | 821.0 |
| 27.5° | 985.9 | 999.8 | 865.6 | 815.7 | 699.0 | 601.8 | 655.1 | 696.4 | 766.8 | 814.4 | 886.7 |
| 30° | 1201.7 | 1179.6 | 1022.2 | 972.3 | 839.1 | 707.3 | 732.1 | 734.7 | 838.1 | 891.7 | 960.4 |
| 32.5° | 1370.9 | 1385.1 | 1187.5 | 1110.8 | 1004.4 | 869.5 | 789.9 | 824.3 | 898.3 | 1017.6 | 1082.7 |
| 35° | 1554.0 | 1552.7 | 1360.0 | 1256.9 | 1117.7 | 1002.1 | 961.4 | 986.5 | 1079.4 | 1214.6 | 1231.8 |
| 37.5° | 1827.7 | 1804.2 | 1576.8 | 1425.8 | 1307.5 | 1208.6 | 1177.6 | 1144.2 | 1240.0 | 1368.9 | 1433.4 |
| 40° | 2085.8 | 2004.8 | 1794.6 | 1615.5 | 1464.1 | 1423.8 | 1311.4 | 1331.9 | 1360.3 | 1530.5 | 1708.7 |
| 42.5° | 2346.5 | 2296.3 | 2015.4 | 1865.3 | 1679.3 | 1583.4 | 1510.1 | 1500.5 | 1635.6 | 1837.2 | 2021.3 |
| 45° | 2690.6 | 2536.9 | 2312.2 | 2180.3 | 1964.8 | 1868.6 | 1809.5 | 1844.8 | 1966.5 | 2260.9 | 2383.6 |
| 47.5° | 2979.5 | 2838.0 | 2645.0 | 2444.7 | 2218.6 | 2326.7 | 2215.7 | 2159.8 | 2326.7 | 2631.1 | 2794.0 |
| 50° | 3227.7 | 3070.0 | 2874.7 | 2726.3 | 2689.6 | 2793.4 | 2568.6 | 2589.1 | 2697.5 | 3055.1 | 3147.0 |
| 52.5° | 3408.1 | 3242.2 | 3071.7 | 2999.9 | 3150.3 | 3202.5 | 3089.8 | 3044.6 | 3143.1 | 3416.7 | 3461.3 |
| 55° | 3543.9 | 3374.1 | 3240.9 | 3339.7 | 3630.5 | 3613.4 | 3653.0 | 3498.3 | 3592.5 | 3793.8 | 3772.7 |
| 57.5° | 3552.2 | 3350.9 | 3272.9 | 3431.9 | 3831.2 | 4097.2 | 4213.2 | 3950.1 | 4003.7 | 4088.6 | 4041.0 |
| 60° | 3292.4 | 3092.2 | 3085.9 | 3311.6 | 3889.3 | 4222.5 | 4476.3 | 4348.1 | 4276.3 | 4339.5 | 4249.2 |
| 62.5° | 2774.9 | 2634.7 | 2700.2 | 2949.7 | 3672.8 | 4153.4 | 4616.4 | 4770.8 | 4491.5 | 4505.7 | 4377.5 |
| 65° | 2118.8 | 1971.8 | 2074.2 | 2388.5 | 3199.6 | 4076.1 | 4656.1 | 4936.0 | 4487.5 | 4553.0 | 4254.5 |
| 67.5° | 1403.3 | 1318.0 | 1434.0 | 1780.4 | 2543.9 | 3598.1 | 4635.6 | 4762.5 | 4345.1 | 4368.2 | 3798.1 |
| 70° | 724.5 | 703.6 | 797.5 | 1070.8 | 1710.3 | 2764.3 | 4434.3 | 4364.9 | 4055.9 | 3763.1 | 2929.5 |
| 72.5° | 232.0 | 233.0 | 323.2 | 489.1 | 922.1 | 1682.9 | 3408.4 | 3503.6 | 3245.5 | 2752.7 | 1788.7 |
| 75° | 102.8 | 101.1 | 135.2 | 205.2 | 384.4 | 754.5 | 2117.5 | 2220.3 | 2020.7 | 1514.3 | 751.9 |
| 77.5° | 74.0 | 71.7 | 86.6 | 120.0 | 190.4 | 255.8 | 992.8 | 1071.5 | 916.1 | 524.8 | 172.2 |
| 80° | 52.2 | 51.9 | 62.8 | 84.3 | 119.0 | 113.7 | 313.6 | 351.7 | 281.6 | 127.2 | 50.6 |
| 82.5° | 29.4 | 30.4 | 43.6 | 59.5 | 72.4 | 56.8 | 88.2 | 97.2 | 94.9 | 67.8 | 22.1 |
| 85° | 14.2 | 15.9 | 28.4 | 43.0 | 38.0 | 22.1 | 31.4 | 34.0 | 39.7 | 39.3 | 11.2 |
| 87.5° | 0.0 | 0.0 | 11.6 | 19.5 | 10.2 | 3.3 | 9.6 | 10.9 | 10.6 | 12.6 | 2.6 |
| 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° | 235.0 | 235.0 | 235.0 | 235.0 | 235.0 | 235.0 | 235.0 | 235.0 | 235.0 | 235.0 | 235.0 |
| 2.5° | 282.6 | 280.6 | 255.5 | 257.5 | 263.1 | 260.8 | 262.7 | 258.1 | 252.8 | 274.3 | 274.0 |
| 5° | 357.3 | 342.4 | 334.5 | 327.2 | 328.5 | 313.6 | 322.2 | 326.2 | 325.5 | 337.8 | 341.1 |
| 7.5° | 422.7 | 402.9 | 387.0 | 371.8 | 348.7 | 327.9 | 340.7 | 349.0 | 354.6 | 375.8 | 384.0 |
| 10° | 453.4 | 437.3 | 431.0 | 401.2 | 384.7 | 371.8 | 356.3 | 345.0 | 349.7 | 344.1 | 349.7 |
| 12.5° | 520.9 | 510.0 | 485.8 | 455.8 | 435.9 | 409.5 | 351.7 | 303.4 | 273.7 | 274.0 | 272.0 |
| 15° | 582.3 | 581.7 | 545.7 | 495.7 | 438.2 | 362.9 | 272.7 | 211.9 | 183.8 | 175.8 | 173.2 |
| 17.5° | 662.7 | 652.7 | 587.0 | 513.3 | 409.8 | 280.9 | 185.7 | 145.1 | 142.4 | 147.1 | 145.1 |
| 20° | 713.9 | 699.3 | 607.5 | 487.8 | 337.8 | 190.0 | 140.1 | 128.6 | 136.5 | 143.1 | 141.5 |
| 22.5° | 765.1 | 743.3 | 623.0 | 456.8 | 240.3 | 139.1 | 126.6 | 124.6 | 129.6 | 137.8 | 139.1 |
| 25° | 793.2 | 788.9 | 653.4 | 398.6 | 164.6 | 122.0 | 122.0 | 121.3 | 122.9 | 128.9 | 127.9 |
| 27.5° | 874.8 | 816.7 | 630.6 | 311.0 | 127.2 | 112.0 | 113.7 | 113.0 | 107.1 | 113.0 | 113.4 |
| 30° | 925.7 | 899.0 | 632.2 | 221.4 | 112.0 | 99.1 | 103.4 | 98.2 | 89.2 | 94.2 | 93.2 |
| 32.5° | 1028.2 | 961.4 | 627.3 | 149.4 | 102.1 | 94.5 | 87.9 | 80.3 | 73.7 | 75.7 | 74.0 |
| 35° | 1147.5 | 1096.6 | 560.2 | 120.0 | 95.2 | 83.6 | 73.0 | 65.4 | 58.5 | 60.2 | 59.8 |
| 37.5° | 1384.8 | 1223.2 | 504.7 | 108.1 | 90.6 | 76.7 | 64.4 | 53.9 | 50.2 | 51.2 | 52.2 |
| 40° | 1604.6 | 1434.4 | 401.2 | 102.8 | 82.6 | 68.4 | 53.2 | 45.6 | 43.3 | 44.0 | 44.9 |
| 42.5° | 1933.1 | 1602.3 | 303.1 | 97.5 | 74.7 | 57.8 | 44.3 | 39.3 | 37.0 | 38.3 | 39.0 |
| 45° | 2251.0 | 1745.0 | 226.4 | 92.9 | 68.1 | 49.9 | 37.3 | 34.0 | 31.4 | 32.4 | 33.7 |
| 47.5° | 2568.6 | 1903.7 | 168.9 | 85.6 | 60.8 | 43.0 | 32.1 | 29.7 | 28.1 | 28.4 | 30.1 |
| 50° | 2852.9 | 1977.7 | 132.9 | 76.7 | 54.9 | 37.3 | 29.1 | 26.8 | 26.1 | 26.4 | 27.8 |
| 52.5° | 3061.7 | 1978.4 | 112.0 | 68.7 | 49.2 | 33.0 | 27.4 | 24.8 | 24.5 | 25.1 | 26.4 |
| 55° | 3250.5 | 1925.5 | 97.2 | 61.8 | 44.3 | 30.1 | 26.1 | 23.8 | 23.8 | 24.5 | 25.8 |
| 57.5° | 3375.7 | 1828.3 | 84.3 | 54.5 | 40.0 | 28.4 | 25.1 | 22.8 | 22.5 | 22.1 | 23.1 |
| 60° | 3436.9 | 1695.8 | 71.4 | 47.9 | 36.0 | 27.4 | 24.5 | 20.2 | 19.8 | 19.2 | 19.8 |
| 62.5° | 3398.2 | 1529.9 | 59.8 | 41.3 | 32.1 | 26.1 | 21.5 | 17.5 | 16.9 | 15.5 | 16.5 |
| 65° | 3200.6 | 1328.3 | 50.6 | 35.4 | 27.8 | 22.1 | 18.2 | 14.9 | 13.2 | 11.6 | 11.2 |
| 67.5° | 2796.4 | 1079.1 | 42.3 | 30.4 | 23.8 | 18.2 | 14.9 | 13.2 | 10.2 | 8.9 | 8.6 |
| 70° | 2095.7 | 736.7 | 35.0 | 26.1 | 19.8 | 15.5 | 12.6 | 11.9 | 9.6 | 8.6 | 7.9 |
| 72.5° | 1229.5 | 397.6 | 29.4 | 22.8 | 16.9 | 12.9 | 10.2 | 10.9 | 9.6 | 7.9 | 7.3 |
| 75° | 491.1 | 132.2 | 23.5 | 18.2 | 13.6 | 9.3 | 8.6 | 8.9 | 8.6 | 7.3 | 5.9 |
| 77.5° | 112.0 | 41.6 | 18.2 | 14.2 | 10.6 | 5.9 | 6.9 | 7.6 | 7.6 | 5.9 | 4.3 |
| 80° | 35.0 | 16.5 | 10.6 | 8.9 | 7.6 | 3.3 | 5.0 | 5.3 | 3.6 | 1.7 | 0.0 |
| 82.5° | 11.2 | 4.6 | 3.6 | 3.6 | 3.3 | 0.7 | 1.0 | 0.7 | 0.0 | 0.0 | 0.0 |
| 85° | 4.3 | 3.0 | 2.3 | 2.3 | 1.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 1.7 | 1.3 | 1.0 | 1.3 | 0.7 | 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)