

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: P366870

Luminaire Tested: **MSA-SA1C-727-U-SL3**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P366870
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-18)
Test Lab: INNOVATION CENTER
Issue Date: 12/2/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: MSA-SA1C-727-U-SL3
Description: MESA POST TOP DECORATIVE LUMINAIRE. (1) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III SPILL LIGHT ELIMINATOR OPTICS.
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5147 lumens
Efficiency: N/A
Efficacy: 87.2 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type III - Short
BUG Rating: B1 - U0 - G2

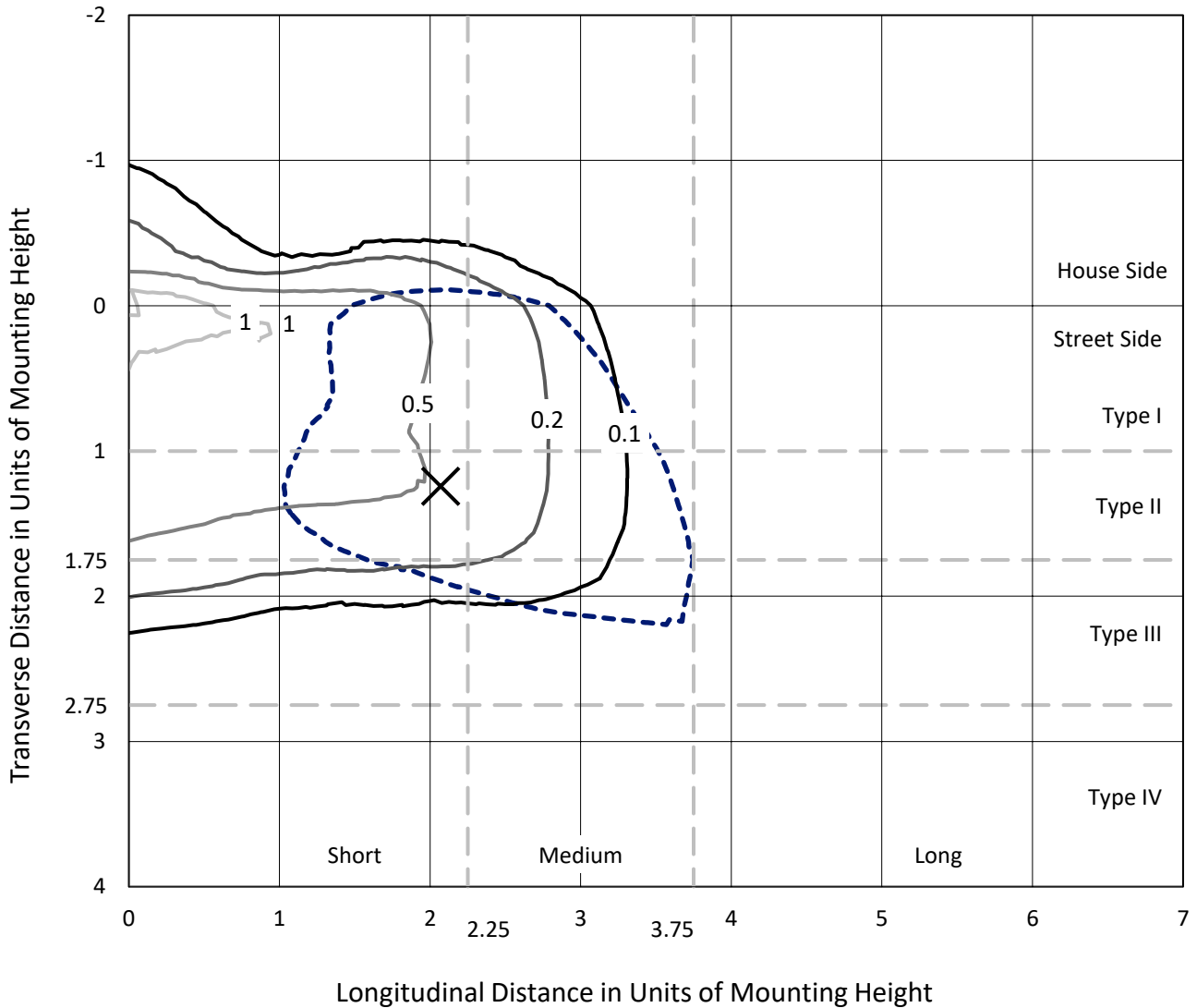
Input Watts (W): 59
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

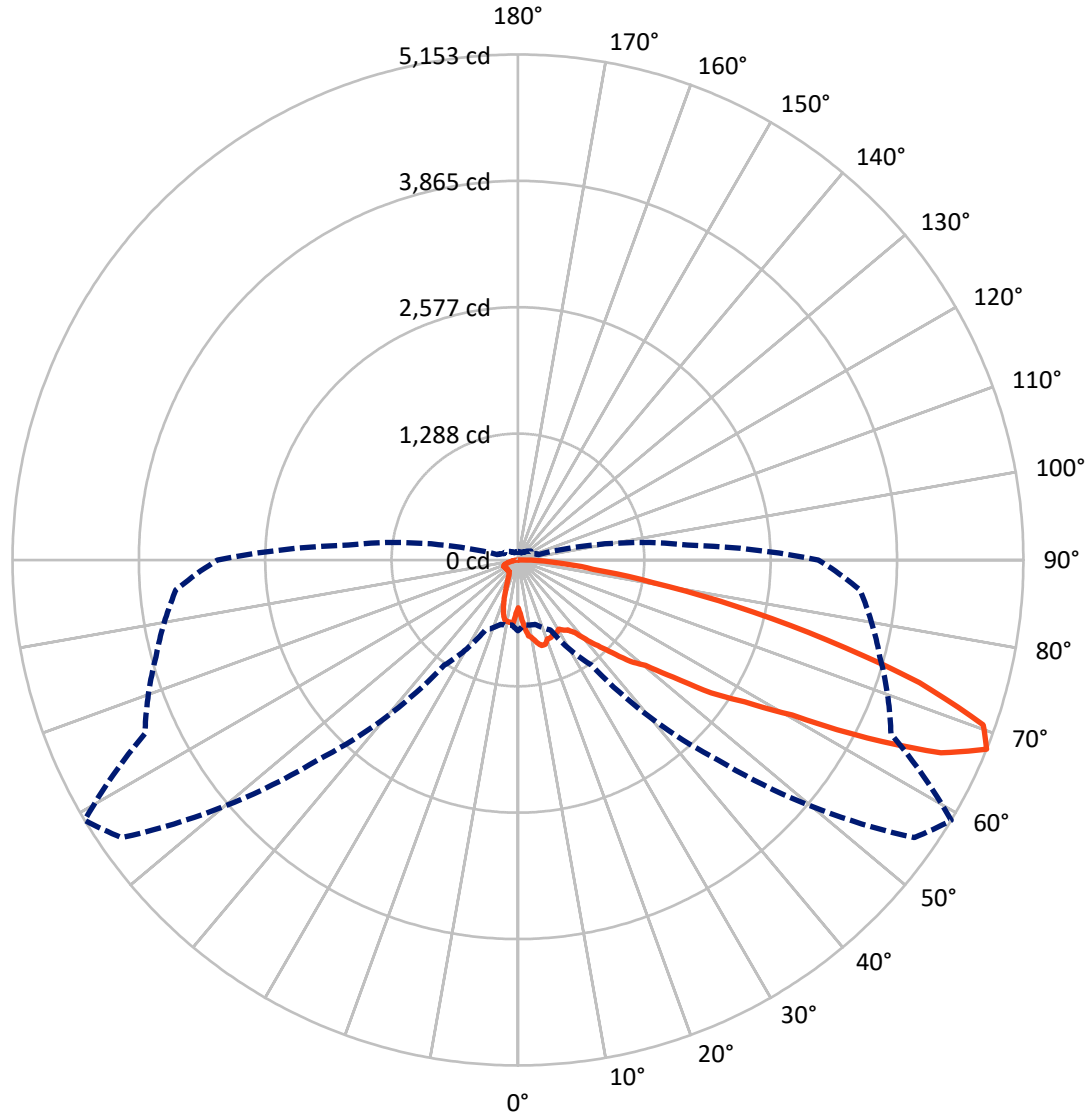
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 1.3 fc
 Type III - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 59-Deg Lateral - - - Horizontal Cone Through 67.5-Deg Vertical

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FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 774.7 | 0.0 | 774.7 |
| | % Fixture | 15.1 | 0.0 | 15.1 |
| Street Side | Lumens | 4372.3 | 0.0 | 4372.3 |
| | % Fixture | 84.9 | 0.0 | 84.9 |
| Total | Lumens | 5147.0 | 0.0 | 5147.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 63.6 | 1.2 |
| 10°-20° | 188.2 | 3.7 |
| 20°-30° | 268.8 | 5.2 |
| 30°-40° | 396.1 | 7.7 |
| 40°-50° | 669.3 | 13.0 |
| 50°-60° | 1164.6 | 22.6 |
| 60°-70° | 1484.1 | 28.8 |
| 70°-80° | 785.8 | 15.3 |
| 80°-90° | 126.4 | 2.5 |
| 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° | 5147.0 | 100.0 |
| 0°-180° | 5147.0 | 100.0 |

Coefficient of Utilization



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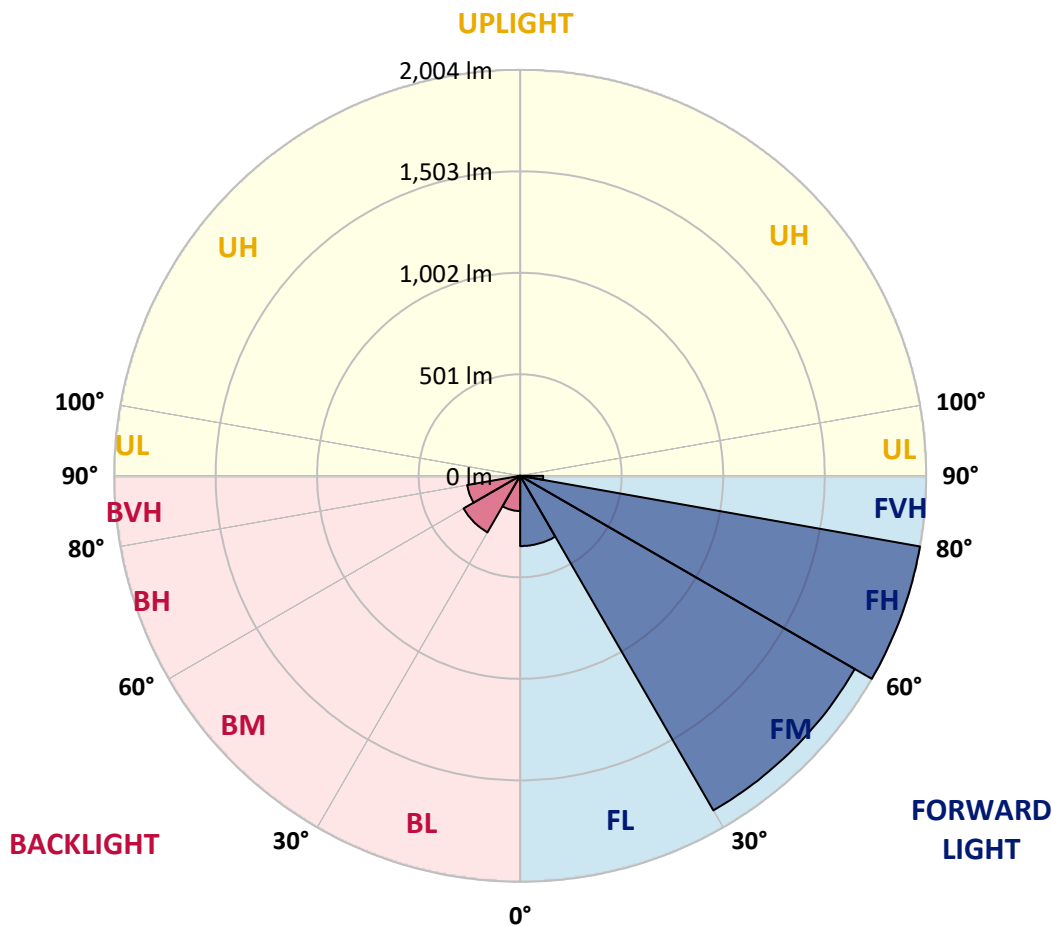
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 346.9 | 6.7 | | | |
| FM (30°-60°) | 1907.4 | 37.1 | | | |
| FH (60°-80°) | 2004.4 | 38.9 | | | G2/5000 |
| FVH (80°-90°) | 113.5 | 2.2 | | | G2/225 |
| BL (0°-30°) | 173.7 | 3.4 | B1/500 | | |
| BM (30°-60°) | 322.6 | 6.3 | B1/1000 | | |
| BH (60°-80°) | 265.5 | 5.2 | B1/500 | | G1/500 |
| BVH (80°-90°) | 12.9 | 0.3 | | | G1/100 |
| 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° | 59° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 487.0 | 487.0 | 487.0 | 487.0 | 487.0 | 487.0 | 487.0 | 487.0 | 487.0 | 487.0 | 487.0 |
| 2.5° | 608.1 | 579.7 | 549.6 | 558.1 | 575.4 | 583.2 | 574.7 | 566.4 | 555.7 | 543.1 | 586.3 |
| 5° | 737.4 | 695.3 | 689.2 | 689.0 | 682.9 | 658.5 | 689.9 | 687.7 | 700.4 | 713.4 | 747.0 |
| 7.5° | 774.3 | 758.6 | 741.6 | 749.6 | 718.9 | 717.6 | 766.4 | 780.4 | 804.8 | 796.8 | 841.9 |
| 10° | 755.3 | 737.7 | 746.6 | 743.3 | 746.2 | 778.4 | 808.3 | 809.2 | 835.4 | 861.1 | 832.1 |
| 12.5° | 721.9 | 723.3 | 758.8 | 757.5 | 803.3 | 863.3 | 872.2 | 865.2 | 908.0 | 890.5 | 915.4 |
| 15° | 745.7 | 761.6 | 752.7 | 760.3 | 778.4 | 854.8 | 879.6 | 904.9 | 945.5 | 961.2 | 936.4 |
| 17.5° | 783.7 | 792.2 | 752.0 | 747.9 | 785.2 | 821.4 | 883.1 | 904.7 | 911.0 | 1022.9 | 987.8 |
| 20° | 767.5 | 784.8 | 745.5 | 695.1 | 757.1 | 805.0 | 865.9 | 859.4 | 890.1 | 1027.7 | 998.5 |
| 22.5° | 813.3 | 784.8 | 734.8 | 699.0 | 720.9 | 764.9 | 816.6 | 859.6 | 896.0 | 999.6 | 1014.0 |
| 25° | 822.1 | 808.5 | 761.9 | 726.3 | 718.9 | 734.6 | 808.3 | 836.5 | 898.0 | 1038.0 | 1005.7 |
| 27.5° | 875.3 | 855.0 | 759.9 | 761.0 | 724.1 | 696.4 | 782.1 | 841.3 | 920.2 | 1014.2 | 1026.0 |
| 30° | 941.4 | 925.9 | 806.6 | 810.9 | 759.9 | 708.9 | 800.0 | 817.9 | 933.1 | 1051.3 | 1051.5 |
| 32.5° | 990.9 | 1018.1 | 898.4 | 839.1 | 821.0 | 782.8 | 772.5 | 853.0 | 918.0 | 1118.5 | 1095.1 |
| 35° | 1080.1 | 1101.2 | 969.1 | 921.5 | 860.2 | 817.3 | 847.1 | 876.2 | 980.6 | 1206.8 | 1159.9 |
| 37.5° | 1245.2 | 1220.8 | 1100.4 | 1025.6 | 1002.7 | 940.7 | 957.3 | 937.0 | 1048.7 | 1306.0 | 1286.9 |
| 40° | 1340.7 | 1319.6 | 1192.8 | 1151.4 | 1060.7 | 1068.5 | 1047.8 | 1062.6 | 1139.6 | 1411.6 | 1405.5 |
| 42.5° | 1435.0 | 1406.6 | 1299.5 | 1270.7 | 1180.2 | 1141.8 | 1145.5 | 1193.5 | 1279.9 | 1582.2 | 1561.9 |
| 45° | 1528.1 | 1455.5 | 1408.6 | 1416.2 | 1372.6 | 1293.8 | 1299.3 | 1344.4 | 1433.0 | 1777.2 | 1730.5 |
| 47.5° | 1599.4 | 1539.4 | 1502.8 | 1493.4 | 1471.8 | 1577.2 | 1530.0 | 1548.4 | 1587.4 | 1950.8 | 1933.1 |
| 50° | 1734.4 | 1664.4 | 1616.6 | 1603.1 | 1676.4 | 1823.0 | 1727.0 | 1687.5 | 1770.6 | 2175.2 | 2166.1 |
| 52.5° | 1950.6 | 1863.3 | 1783.7 | 1782.8 | 1888.8 | 1983.9 | 2051.6 | 1983.5 | 2014.0 | 2405.1 | 2431.3 |
| 55° | 2139.2 | 2038.2 | 1966.7 | 2006.2 | 2157.1 | 2215.4 | 2445.0 | 2391.8 | 2366.1 | 2637.2 | 2712.0 |
| 57.5° | 2209.7 | 2091.7 | 2045.0 | 2103.2 | 2325.7 | 2625.0 | 2867.7 | 2727.7 | 2702.6 | 2899.8 | 3056.6 |
| 60° | 2055.0 | 1930.3 | 1933.1 | 2042.8 | 2428.2 | 2925.7 | 3329.9 | 3211.0 | 3064.0 | 3226.7 | 3379.8 |
| 62.5° | 1614.5 | 1501.7 | 1575.2 | 1742.1 | 2342.3 | 3218.0 | 3949.3 | 3999.5 | 3476.9 | 3497.8 | 3559.1 |
| 65° | 1097.3 | 1019.2 | 1085.5 | 1248.9 | 1899.7 | 3377.4 | 4539.3 | 4740.4 | 3852.9 | 3675.4 | 3636.6 |
| 67.5° | 722.2 | 667.0 | 679.9 | 788.5 | 1307.8 | 2879.3 | 4933.9 | 5153.1 | 4196.7 | 3821.1 | 3500.0 |
| 70° | 559.2 | 514.7 | 509.1 | 566.0 | 775.6 | 2000.3 | 4700.1 | 5033.3 | 4406.1 | 3684.5 | 3050.7 |
| 72.5° | 438.8 | 405.0 | 408.1 | 462.8 | 600.7 | 1109.7 | 3637.0 | 4280.2 | 4090.7 | 3177.7 | 2343.8 |
| 75° | 342.2 | 314.5 | 330.0 | 392.6 | 555.5 | 689.7 | 2509.4 | 3248.5 | 3162.6 | 2353.0 | 1336.8 |
| 77.5° | 248.4 | 230.5 | 252.6 | 334.4 | 522.2 | 591.7 | 1562.1 | 2266.4 | 2026.0 | 1208.1 | 458.7 |
| 80° | 162.9 | 152.9 | 171.0 | 272.6 | 473.5 | 569.5 | 965.4 | 1388.7 | 1001.1 | 339.4 | 173.6 |
| 82.5° | 96.0 | 91.6 | 106.7 | 184.5 | 380.6 | 533.7 | 643.9 | 771.7 | 409.6 | 143.5 | 92.3 |
| 85° | 50.4 | 47.1 | 63.3 | 106.0 | 262.4 | 487.3 | 506.9 | 462.0 | 197.8 | 62.4 | 44.1 |
| 87.5° | 16.8 | 16.4 | 26.8 | 41.0 | 99.2 | 258.7 | 270.5 | 219.4 | 81.6 | 18.1 | 9.6 |
| 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° | 487.0 | 487.0 | 487.0 | 487.0 | 487.0 | 487.0 | 487.0 | 487.0 | 487.0 | 487.0 | 487.0 |
| 2.5° | 592.2 | 583.4 | 533.3 | 540.3 | 546.8 | 543.5 | 541.6 | 518.9 | 516.7 | 549.0 | 546.4 |
| 5° | 746.2 | 710.0 | 667.2 | 665.2 | 637.1 | 608.3 | 614.0 | 604.8 | 607.4 | 620.7 | 622.1 |
| 7.5° | 827.5 | 782.4 | 741.6 | 675.3 | 619.0 | 573.4 | 580.6 | 578.4 | 572.5 | 602.6 | 610.7 |
| 10° | 826.0 | 785.9 | 739.8 | 659.6 | 621.6 | 584.5 | 540.0 | 497.9 | 485.5 | 470.7 | 472.0 |
| 12.5° | 880.5 | 845.0 | 744.6 | 662.8 | 611.4 | 547.5 | 464.1 | 418.1 | 374.1 | 373.2 | 362.1 |
| 15° | 897.5 | 871.4 | 754.9 | 644.1 | 539.6 | 448.0 | 361.8 | 311.9 | 280.1 | 273.7 | 264.4 |
| 17.5° | 940.5 | 899.5 | 723.7 | 583.4 | 456.3 | 350.3 | 272.0 | 237.1 | 234.5 | 238.8 | 234.0 |
| 20° | 943.3 | 876.8 | 667.4 | 493.8 | 366.6 | 265.4 | 221.8 | 204.4 | 213.7 | 224.4 | 224.0 |
| 22.5° | 940.9 | 848.2 | 618.8 | 417.5 | 275.5 | 213.3 | 194.3 | 190.4 | 199.1 | 215.1 | 217.0 |
| 25° | 916.5 | 838.9 | 557.9 | 342.9 | 223.6 | 182.8 | 177.5 | 179.9 | 190.8 | 209.6 | 209.6 |
| 27.5° | 942.0 | 800.7 | 481.6 | 279.0 | 188.0 | 162.7 | 166.4 | 172.5 | 180.6 | 202.0 | 205.9 |
| 30° | 933.7 | 813.3 | 420.1 | 224.7 | 165.8 | 148.8 | 157.0 | 163.1 | 172.3 | 194.6 | 196.5 |
| 32.5° | 956.0 | 779.5 | 368.4 | 188.9 | 151.2 | 143.3 | 145.3 | 153.6 | 165.5 | 183.0 | 186.5 |
| 35° | 990.0 | 792.0 | 309.1 | 169.9 | 144.0 | 137.0 | 140.7 | 147.2 | 159.2 | 176.2 | 179.1 |
| 37.5° | 1098.6 | 791.3 | 268.1 | 159.4 | 142.6 | 135.7 | 137.4 | 142.0 | 155.9 | 171.4 | 178.0 |
| 40° | 1168.4 | 836.7 | 230.8 | 157.0 | 141.1 | 135.0 | 133.5 | 138.5 | 149.6 | 167.9 | 172.5 |
| 42.5° | 1299.5 | 864.4 | 214.6 | 156.2 | 140.9 | 131.3 | 129.8 | 135.7 | 146.6 | 163.6 | 170.6 |
| 45° | 1438.0 | 903.9 | 201.8 | 155.7 | 140.2 | 130.6 | 126.1 | 133.5 | 142.6 | 159.0 | 167.1 |
| 47.5° | 1600.9 | 987.4 | 194.6 | 154.2 | 138.9 | 131.5 | 124.8 | 128.5 | 138.7 | 155.1 | 163.1 |
| 50° | 1814.2 | 1098.0 | 196.1 | 152.0 | 140.9 | 131.7 | 122.8 | 124.5 | 133.9 | 149.8 | 158.1 |
| 52.5° | 2073.6 | 1269.2 | 205.9 | 152.9 | 142.2 | 130.6 | 121.9 | 121.1 | 129.1 | 143.1 | 151.4 |
| 55° | 2386.1 | 1512.2 | 235.3 | 157.0 | 142.2 | 130.4 | 120.6 | 116.7 | 122.8 | 134.1 | 142.2 |
| 57.5° | 2763.2 | 1793.5 | 292.9 | 159.0 | 141.1 | 129.1 | 117.8 | 110.8 | 114.5 | 123.9 | 131.5 |
| 60° | 3087.1 | 2020.6 | 352.2 | 160.3 | 143.3 | 126.1 | 112.1 | 103.4 | 105.8 | 113.0 | 119.7 |
| 62.5° | 3252.3 | 2084.3 | 370.1 | 159.2 | 149.2 | 124.1 | 105.3 | 95.5 | 95.8 | 101.9 | 108.0 |
| 65° | 3283.2 | 1999.4 | 298.4 | 158.1 | 156.8 | 123.9 | 100.5 | 88.8 | 87.2 | 91.6 | 96.8 |
| 67.5° | 3062.5 | 1735.5 | 215.3 | 155.7 | 157.7 | 122.6 | 97.3 | 83.3 | 79.4 | 82.4 | 86.8 |
| 70° | 2600.3 | 1397.7 | 180.8 | 150.9 | 147.2 | 116.0 | 91.6 | 77.6 | 72.4 | 74.6 | 77.9 |
| 72.5° | 1938.6 | 1034.1 | 157.7 | 140.7 | 128.2 | 99.2 | 82.9 | 71.3 | 65.9 | 67.4 | 69.8 |
| 75° | 1077.0 | 551.6 | 132.0 | 122.4 | 104.7 | 80.3 | 70.7 | 63.3 | 58.5 | 59.1 | 61.7 |
| 77.5° | 357.7 | 203.5 | 96.8 | 97.1 | 79.2 | 61.9 | 58.2 | 54.1 | 50.4 | 50.6 | 52.8 |
| 80° | 162.1 | 112.5 | 69.4 | 69.8 | 55.2 | 44.9 | 44.7 | 43.4 | 41.0 | 40.4 | 41.9 |
| 82.5° | 94.0 | 68.3 | 47.5 | 45.4 | 35.6 | 29.2 | 32.5 | 31.8 | 31.2 | 28.8 | 29.2 |
| 85° | 46.2 | 36.6 | 24.9 | 23.6 | 19.6 | 14.6 | 17.4 | 18.1 | 17.4 | 14.8 | 14.6 |
| 87.5° | 11.3 | 12.0 | 6.1 | 5.7 | 3.3 | 1.5 | 2.6 | 2.6 | 3.3 | 2.2 | 1.1 |
| 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)