

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: P368375

Luminaire Tested: **MSA-SA4B-740-U-T3-HSS**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P368375
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-SA4B-740-U-T3-HSS
Description: MESA POST TOP DECORATIVE LUMINAIRE. (4) 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: 14348 lumens
Efficiency: N/A
Efficacy: 83.9 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type III - Short
BUG Rating: B1 - U0 - G3

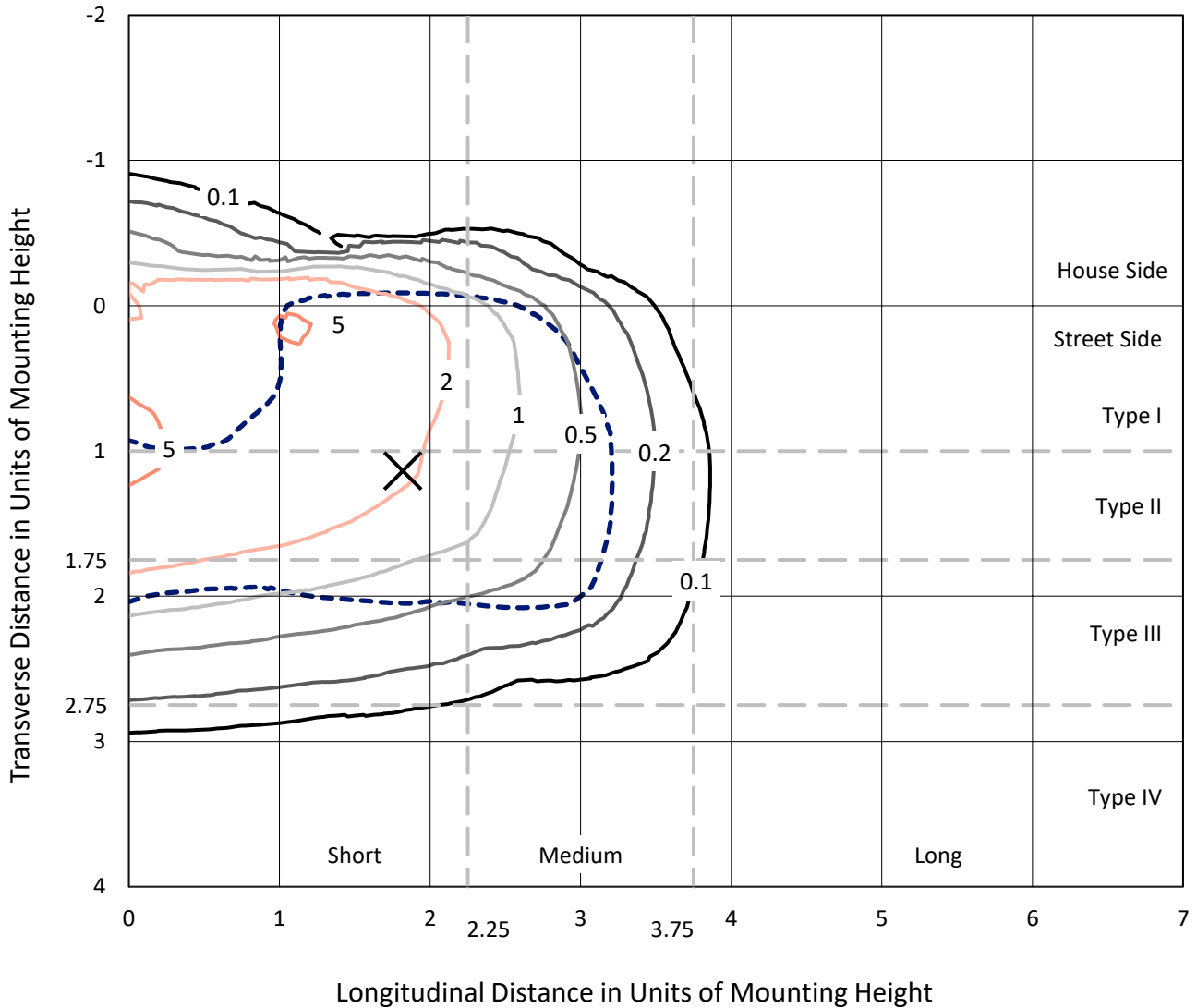
Input Watts (W): 171
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Iso-Footcandle Lines of Horizontal Illumination

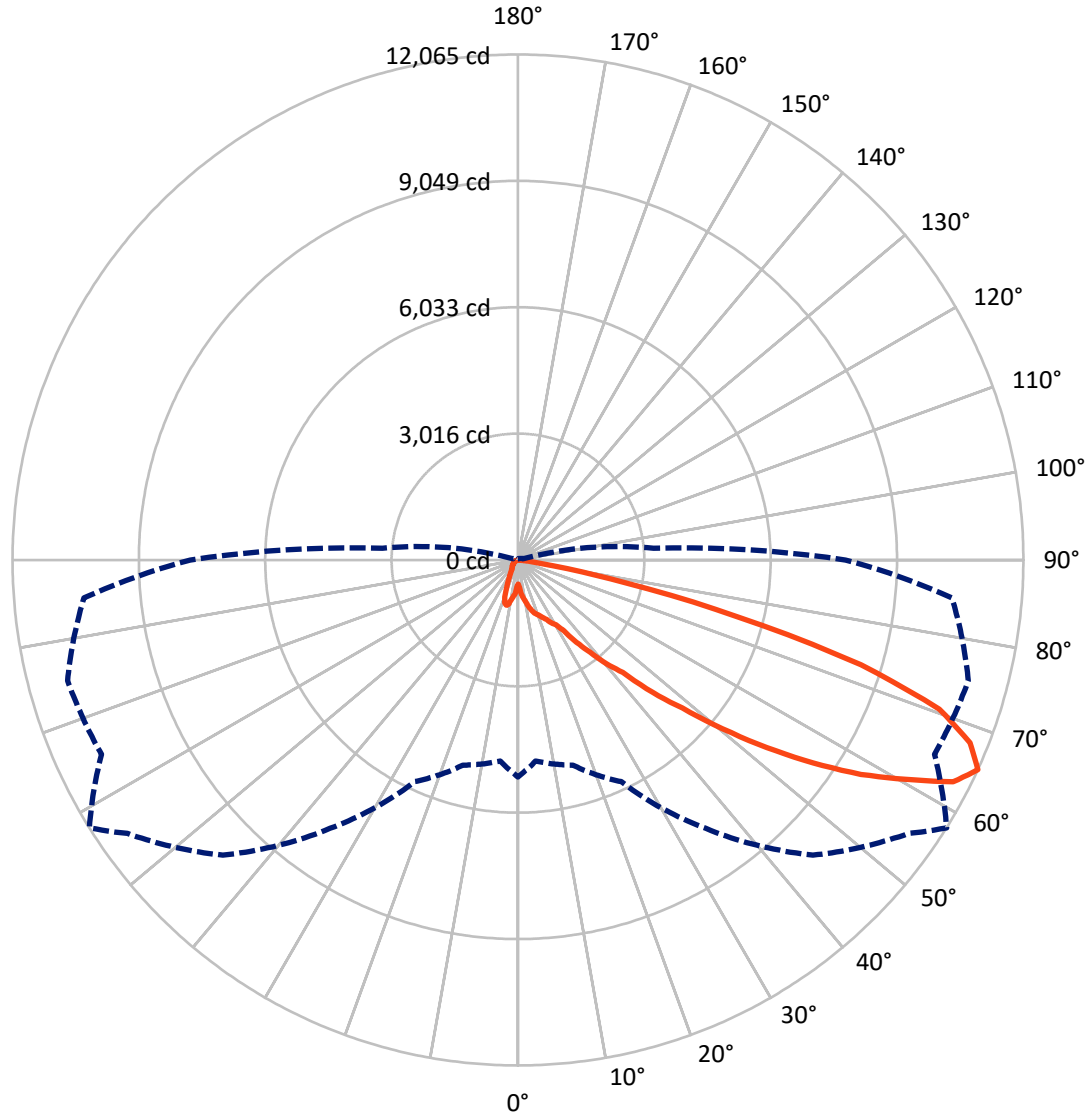
✕ Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 5.8 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 | 1415.8 | 0.0 | 1415.8 |
| | % Fixture | 9.9 | 0.0 | 9.9 |
| Street Side | Lumens | 12932.2 | 0.0 | 12932.2 |
| | % Fixture | 90.1 | 0.0 | 90.1 |
| Total | Lumens | 14348.0 | 0.0 | 14348.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 80.7 | 0.6 |
| 10°-20° | 294.5 | 2.1 |
| 20°-30° | 570.1 | 4.0 |
| 30°-40° | 1137.4 | 7.9 |
| 40°-50° | 2325.3 | 16.2 |
| 50°-60° | 4124.4 | 28.7 |
| 60°-70° | 4348.2 | 30.3 |
| 70°-80° | 1409.7 | 9.8 |
| 80°-90° | 57.6 | 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° | 14348.0 | 100.0 |
| 0°-180° | 14348.0 | 100.0 |

Coefficient of Utilization



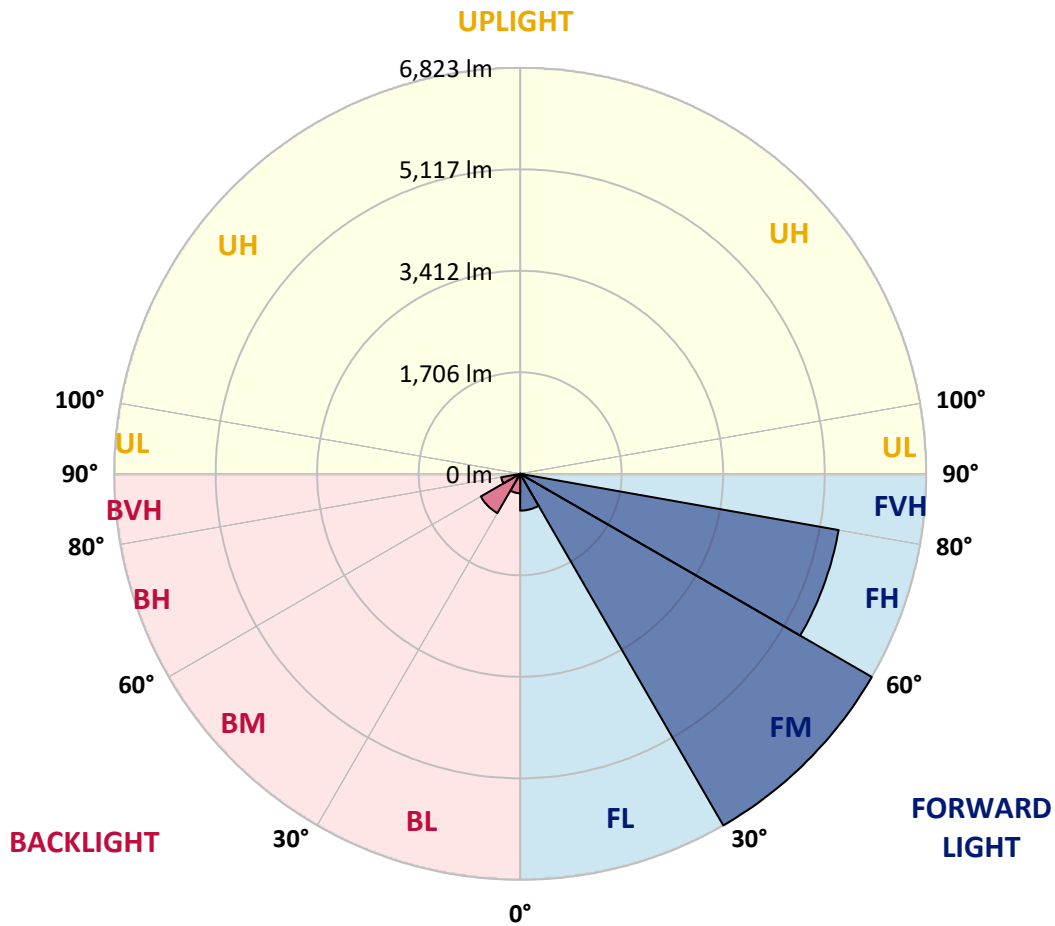
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 619.0 | 4.3 | | | |
| FM (30°-60°) | 6823.2 | 47.6 | | | |
| FH (60°-80°) | 5434.8 | 37.9 | | | G3/7500 |
| FVH (80°-90°) | 55.2 | 0.4 | | | G1/100 |
| BL (0°-30°) | 326.3 | 2.3 | B1/500 | | |
| BM (30°-60°) | 763.9 | 5.3 | B1/1000 | | |
| BH (60°-80°) | 323.1 | 2.3 | B1/500 | | G1/500 |
| BVH (80°-90°) | 2.4 | 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-G3

Type III Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 58° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|
| 0° | 574.4 | 574.4 | 574.4 | 574.4 | 574.4 | 574.4 | 574.4 | 574.4 | 574.4 | 574.4 | 574.4 |
| 2.5° | 701.2 | 680.2 | 647.1 | 652.7 | 659.2 | 672.1 | 661.6 | 651.9 | 641.4 | 627.7 | 680.2 |
| 5° | 846.6 | 811.9 | 808.6 | 801.4 | 795.7 | 794.9 | 807.8 | 803.8 | 809.5 | 835.3 | 862.0 |
| 7.5° | 899.9 | 885.4 | 857.9 | 869.2 | 851.5 | 837.7 | 895.1 | 913.7 | 949.2 | 961.3 | 1030.8 |
| 10° | 894.3 | 873.3 | 884.6 | 890.2 | 902.4 | 952.4 | 988.8 | 1009.0 | 1039.7 | 1105.9 | 1092.2 |
| 12.5° | 920.1 | 938.7 | 950.8 | 951.6 | 1013.8 | 1105.9 | 1131.8 | 1148.7 | 1203.7 | 1229.5 | 1297.4 |
| 15° | 1006.6 | 1037.3 | 1017.9 | 1026.0 | 1046.1 | 1158.4 | 1219.0 | 1256.2 | 1333.7 | 1417.8 | 1434.7 |
| 17.5° | 1130.2 | 1149.6 | 1109.2 | 1080.1 | 1135.8 | 1197.2 | 1307.1 | 1345.9 | 1395.1 | 1591.4 | 1627.8 |
| 20° | 1286.1 | 1319.2 | 1232.0 | 1116.4 | 1189.9 | 1262.7 | 1382.2 | 1400.8 | 1453.3 | 1709.4 | 1766.7 |
| 22.5° | 1650.4 | 1601.1 | 1467.8 | 1287.7 | 1265.9 | 1298.2 | 1412.1 | 1484.8 | 1573.7 | 1775.6 | 1908.9 |
| 25° | 2009.9 | 1992.9 | 1796.6 | 1595.5 | 1450.1 | 1377.4 | 1528.4 | 1568.8 | 1714.2 | 1933.2 | 2006.7 |
| 27.5° | 2409.8 | 2443.7 | 2115.7 | 1993.7 | 1708.6 | 1471.1 | 1601.1 | 1702.1 | 1874.2 | 1990.5 | 2167.4 |
| 30° | 2937.3 | 2883.2 | 2498.6 | 2376.7 | 2051.1 | 1728.8 | 1789.4 | 1795.8 | 2048.7 | 2179.5 | 2347.6 |
| 32.5° | 3350.9 | 3385.6 | 2902.6 | 2715.1 | 2455.0 | 2125.4 | 1930.7 | 2014.7 | 2195.7 | 2487.3 | 2646.5 |
| 35° | 3798.5 | 3795.2 | 3324.3 | 3072.2 | 2732.1 | 2449.4 | 2350.0 | 2411.4 | 2638.4 | 2968.8 | 3010.8 |
| 37.5° | 4467.3 | 4410.0 | 3854.2 | 3485.0 | 3195.8 | 2954.3 | 2878.3 | 2796.7 | 3031.0 | 3346.1 | 3503.6 |
| 40° | 5098.3 | 4900.3 | 4386.6 | 3948.7 | 3578.7 | 3480.2 | 3205.5 | 3255.6 | 3325.1 | 3741.1 | 4176.5 |
| 42.5° | 5735.6 | 5612.9 | 4926.2 | 4559.4 | 4104.6 | 3870.4 | 3691.0 | 3667.6 | 3998.0 | 4490.8 | 4940.7 |
| 45° | 6576.6 | 6201.0 | 5651.6 | 5329.3 | 4802.6 | 4567.5 | 4422.9 | 4509.4 | 4806.6 | 5526.4 | 5826.1 |
| 47.5° | 7282.7 | 6936.9 | 6465.1 | 5975.6 | 5423.0 | 5687.2 | 5415.7 | 5279.2 | 5687.2 | 6431.2 | 6829.5 |
| 50° | 7889.3 | 7504.0 | 7026.6 | 6663.9 | 6574.2 | 6827.8 | 6278.5 | 6328.6 | 6593.6 | 7467.7 | 7692.2 |
| 52.5° | 8330.4 | 7924.9 | 7508.0 | 7332.7 | 7700.3 | 7827.9 | 7552.5 | 7441.8 | 7682.5 | 8351.4 | 8460.5 |
| 55° | 8662.4 | 8247.2 | 7921.7 | 8163.2 | 8874.1 | 8832.1 | 8929.0 | 8551.0 | 8781.2 | 9273.2 | 9221.5 |
| 57.5° | 8682.6 | 8190.7 | 8000.0 | 8388.6 | 9364.5 | 10014.8 | 10298.3 | 9655.3 | 9786.1 | 9993.8 | 9877.4 |
| 60° | 8047.7 | 7558.1 | 7542.8 | 8094.5 | 9506.6 | 10320.9 | 10941.4 | 10627.9 | 10452.6 | 10606.9 | 10386.4 |
| 62.5° | 6782.6 | 6440.1 | 6600.0 | 7210.0 | 8977.5 | 10152.1 | 11283.9 | 11661.1 | 10978.5 | 11013.3 | 10699.8 |
| 65° | 5179.0 | 4819.6 | 5070.0 | 5838.2 | 7820.7 | 9963.1 | 11380.8 | 12065.1 | 10968.8 | 11128.8 | 10399.3 |
| 67.5° | 3430.1 | 3221.7 | 3505.2 | 4351.8 | 6217.9 | 8794.9 | 11330.7 | 11640.9 | 10620.6 | 10677.2 | 9283.7 |
| 70° | 1770.8 | 1719.9 | 1949.3 | 2617.4 | 4180.6 | 6756.8 | 10838.8 | 10669.1 | 9913.8 | 9198.0 | 7160.7 |
| 72.5° | 567.1 | 569.5 | 790.1 | 1195.6 | 2253.9 | 4113.5 | 8331.2 | 8563.9 | 7933.0 | 6728.5 | 4372.0 |
| 75° | 251.2 | 247.2 | 330.4 | 501.7 | 939.5 | 1844.3 | 5175.8 | 5427.1 | 4939.1 | 3701.5 | 1837.8 |
| 77.5° | 181.0 | 175.3 | 211.7 | 293.2 | 465.3 | 625.3 | 2426.7 | 2619.0 | 2239.3 | 1282.8 | 420.9 |
| 80° | 127.6 | 126.8 | 153.5 | 206.0 | 290.8 | 277.9 | 766.6 | 859.5 | 688.3 | 311.0 | 123.6 |
| 82.5° | 71.9 | 74.3 | 106.6 | 145.4 | 176.9 | 138.9 | 215.7 | 237.5 | 231.8 | 165.6 | 54.1 |
| 85° | 34.7 | 38.8 | 69.5 | 105.0 | 92.9 | 54.1 | 76.7 | 83.2 | 96.9 | 96.1 | 27.5 |
| 87.5° | 0.0 | 0.0 | 28.3 | 47.7 | 25.0 | 8.1 | 23.4 | 26.7 | 25.9 | 30.7 | 6.5 |
| 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° | 574.4 | 574.4 | 574.4 | 574.4 | 574.4 | 574.4 | 574.4 | 574.4 | 574.4 | 574.4 | 574.4 |
| 2.5° | 690.7 | 685.9 | 624.5 | 629.3 | 643.0 | 637.4 | 642.2 | 630.9 | 618.0 | 670.5 | 669.7 |
| 5° | 873.3 | 836.9 | 817.5 | 799.8 | 803.0 | 766.6 | 787.6 | 797.3 | 795.7 | 825.6 | 833.7 |
| 7.5° | 1033.2 | 984.8 | 946.0 | 908.8 | 852.3 | 801.4 | 832.9 | 853.1 | 866.8 | 918.5 | 938.7 |
| 10° | 1108.4 | 1068.8 | 1053.4 | 980.7 | 940.3 | 908.8 | 870.8 | 843.4 | 854.7 | 841.0 | 854.7 |
| 12.5° | 1273.2 | 1246.5 | 1187.5 | 1114.0 | 1065.5 | 1000.9 | 859.5 | 741.6 | 668.9 | 669.7 | 664.9 |
| 15° | 1423.4 | 1421.8 | 1333.7 | 1211.8 | 1071.2 | 887.0 | 666.5 | 517.8 | 449.2 | 429.8 | 423.3 |
| 17.5° | 1619.7 | 1595.5 | 1434.7 | 1254.6 | 1001.7 | 686.7 | 454.0 | 354.6 | 348.2 | 359.5 | 354.6 |
| 20° | 1744.9 | 1709.4 | 1484.8 | 1192.4 | 825.6 | 464.5 | 342.5 | 314.2 | 333.6 | 349.8 | 345.8 |
| 22.5° | 1870.1 | 1816.8 | 1522.8 | 1116.4 | 587.3 | 340.1 | 309.4 | 304.6 | 316.7 | 336.9 | 340.1 |
| 25° | 1938.8 | 1928.3 | 1597.1 | 974.3 | 402.3 | 298.1 | 298.1 | 296.5 | 300.5 | 315.1 | 312.6 |
| 27.5° | 2138.3 | 1996.2 | 1541.4 | 760.2 | 311.0 | 273.9 | 277.9 | 276.3 | 261.7 | 276.3 | 277.1 |
| 30° | 2262.8 | 2197.3 | 1545.4 | 541.3 | 273.9 | 242.4 | 252.9 | 239.9 | 218.1 | 230.2 | 227.8 |
| 32.5° | 2513.2 | 2350.0 | 1533.3 | 365.1 | 249.6 | 231.0 | 214.9 | 196.3 | 180.1 | 185.0 | 181.0 |
| 35° | 2804.8 | 2680.4 | 1369.3 | 293.2 | 232.7 | 204.4 | 178.5 | 160.0 | 143.0 | 147.0 | 146.2 |
| 37.5° | 3384.8 | 2989.8 | 1233.6 | 264.2 | 221.3 | 187.4 | 157.5 | 131.7 | 122.8 | 125.2 | 127.6 |
| 40° | 3922.1 | 3506.0 | 980.7 | 251.2 | 202.0 | 167.2 | 130.1 | 111.5 | 105.8 | 107.4 | 109.9 |
| 42.5° | 4725.0 | 3916.4 | 740.8 | 238.3 | 182.6 | 141.4 | 108.3 | 96.1 | 90.5 | 93.7 | 95.3 |
| 45° | 5502.2 | 4265.4 | 553.4 | 227.0 | 166.4 | 122.0 | 91.3 | 83.2 | 76.7 | 79.2 | 82.4 |
| 47.5° | 6278.5 | 4653.1 | 412.8 | 209.2 | 148.6 | 105.0 | 78.4 | 72.7 | 68.7 | 69.5 | 73.5 |
| 50° | 6973.3 | 4834.1 | 324.8 | 187.4 | 134.1 | 91.3 | 71.1 | 65.4 | 63.8 | 64.6 | 67.9 |
| 52.5° | 7483.8 | 4835.7 | 273.9 | 168.0 | 120.4 | 80.8 | 67.1 | 60.6 | 59.8 | 61.4 | 64.6 |
| 55° | 7945.1 | 4706.5 | 237.5 | 151.1 | 108.3 | 73.5 | 63.8 | 58.2 | 58.2 | 59.8 | 63.0 |
| 57.5° | 8251.3 | 4469.0 | 206.0 | 133.3 | 97.7 | 69.5 | 61.4 | 55.7 | 54.9 | 54.1 | 56.5 |
| 60° | 8400.7 | 4145.0 | 174.5 | 117.1 | 88.1 | 67.1 | 59.8 | 49.3 | 48.5 | 46.9 | 48.5 |
| 62.5° | 8306.2 | 3739.5 | 146.2 | 101.0 | 78.4 | 63.8 | 52.5 | 42.8 | 41.2 | 38.0 | 40.4 |
| 65° | 7823.1 | 3246.7 | 123.6 | 86.4 | 67.9 | 54.1 | 44.4 | 36.4 | 32.3 | 28.3 | 27.5 |
| 67.5° | 6835.1 | 2637.6 | 103.4 | 74.3 | 58.2 | 44.4 | 36.4 | 32.3 | 25.0 | 21.8 | 21.0 |
| 70° | 5122.5 | 1800.7 | 85.6 | 63.8 | 48.5 | 38.0 | 30.7 | 29.1 | 23.4 | 21.0 | 19.4 |
| 72.5° | 3005.2 | 971.8 | 71.9 | 55.7 | 41.2 | 31.5 | 25.0 | 26.7 | 23.4 | 19.4 | 17.8 |
| 75° | 1200.4 | 323.1 | 57.4 | 44.4 | 33.1 | 22.6 | 21.0 | 21.8 | 21.0 | 17.8 | 14.5 |
| 77.5° | 273.9 | 101.8 | 44.4 | 34.7 | 25.9 | 14.5 | 17.0 | 18.6 | 18.6 | 14.5 | 10.5 |
| 80° | 85.6 | 40.4 | 25.9 | 21.8 | 18.6 | 8.1 | 12.1 | 12.9 | 8.9 | 4.0 | 0.0 |
| 82.5° | 27.5 | 11.3 | 8.9 | 8.9 | 8.1 | 1.6 | 2.4 | 1.6 | 0.0 | 0.0 | 0.0 |
| 85° | 10.5 | 7.3 | 5.7 | 5.7 | 3.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 4.0 | 3.2 | 2.4 | 3.2 | 1.6 | 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)