

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: P596759

Luminaire Tested: **MSA-SA4A-827-U-T4W-HSS**

Issue Date: 5/27/2021

Test Information

Test Method: LM-79-08
Report Number: P596759
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-15)
Test Lab: INNOVATIONS CENTER
Issue Date: 5/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: MSA-SA4A-827-U-T4W-HSS
Description: MESA POST TOP DECORATIVE LUMINAIRE. (4) LIGHTSQUARES WITH 16 LEDS
EACH AND TYPE IV WIDE OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8592 lumens
Efficiency: N/A
Efficacy: 66.6 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B1 - U0 - G2

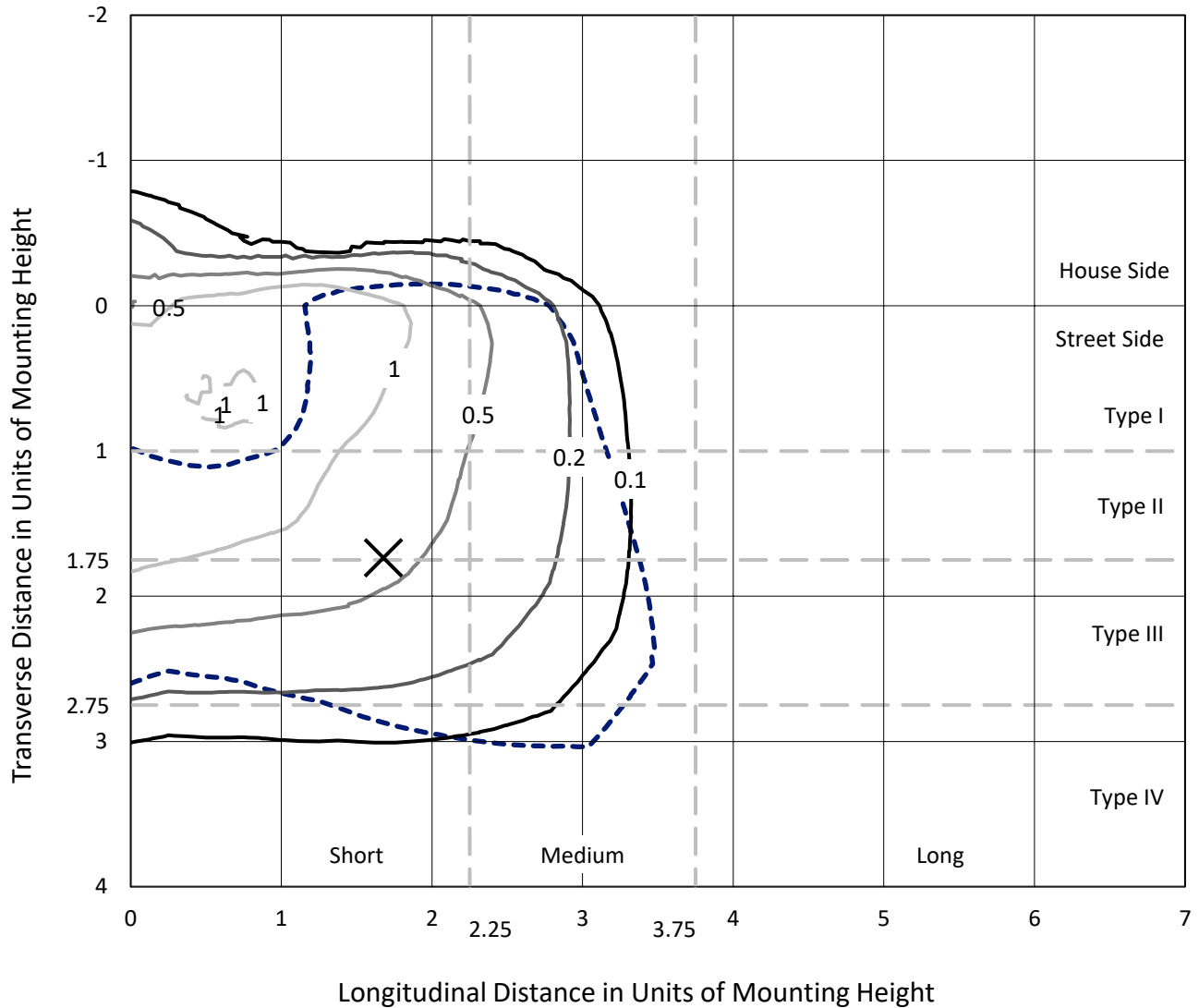
Input Watts (W): 129
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

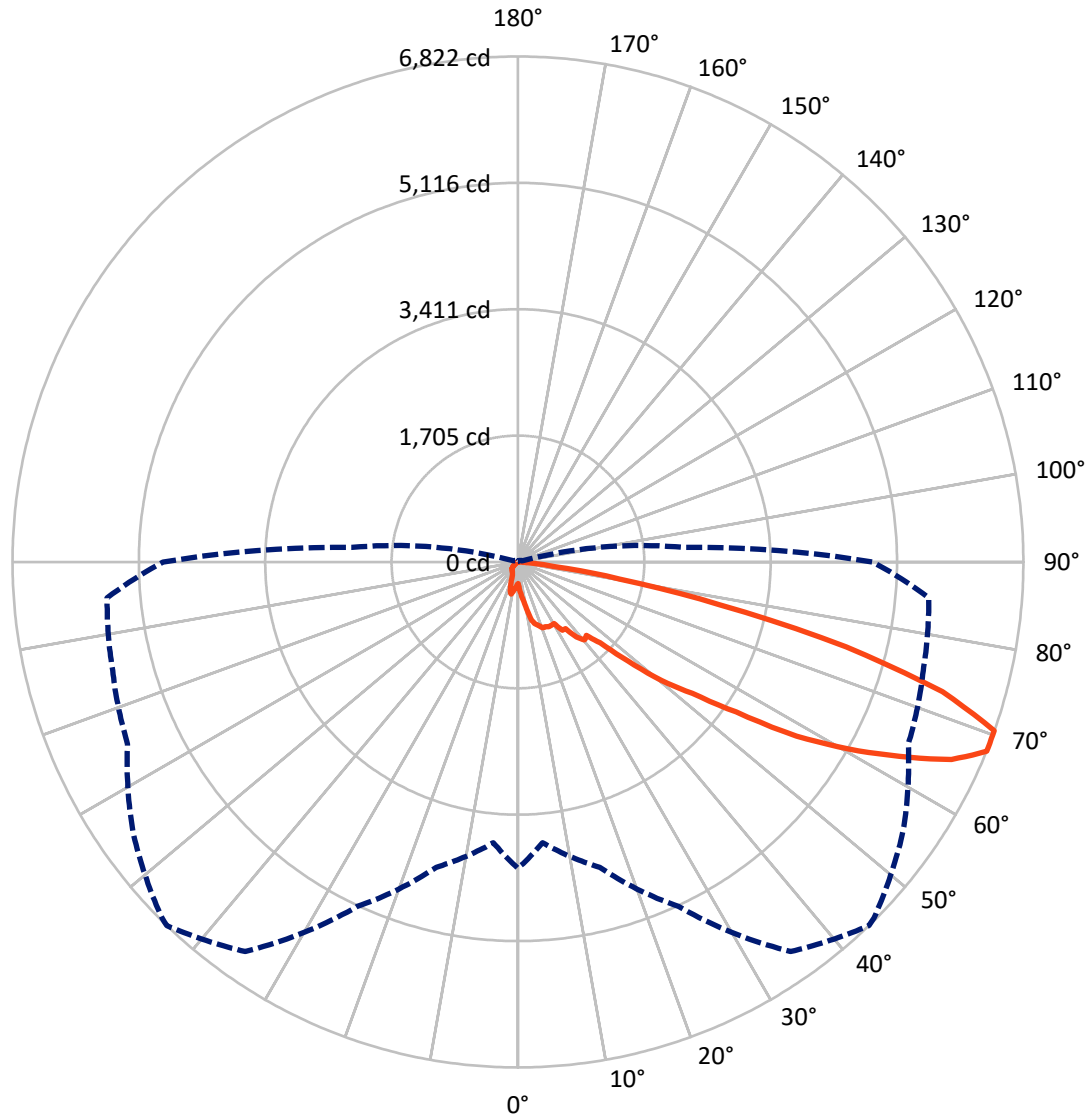
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 2 fc
 Type IV - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 44-Deg Lateral - - - Horizontal Cone Through 67.5-Deg Vertical

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FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 872.8 | 0.0 | 872.8 |
| | % Fixture | 10.2 | 0.0 | 10.2 |
| Street Side | Lumens | 7719.2 | 0.0 | 7719.2 |
| | % Fixture | 89.8 | 0.0 | 89.8 |
| Total | Lumens | 8592.0 | 0.0 | 8592.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 42.9 | 0.5 |
| 10°-20° | 179.6 | 2.1 |
| 20°-30° | 318.2 | 3.7 |
| 30°-40° | 517.2 | 6.0 |
| 40°-50° | 1035.0 | 12.0 |
| 50°-60° | 2123.4 | 24.7 |
| 60°-70° | 2916.9 | 33.9 |
| 70°-80° | 1371.0 | 16.0 |
| 80°-90° | 87.8 | 1.0 |
| 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° | 8592.0 | 100.0 |
| 0°-180° | 8592.0 | 100.0 |

Coefficient of Utilization

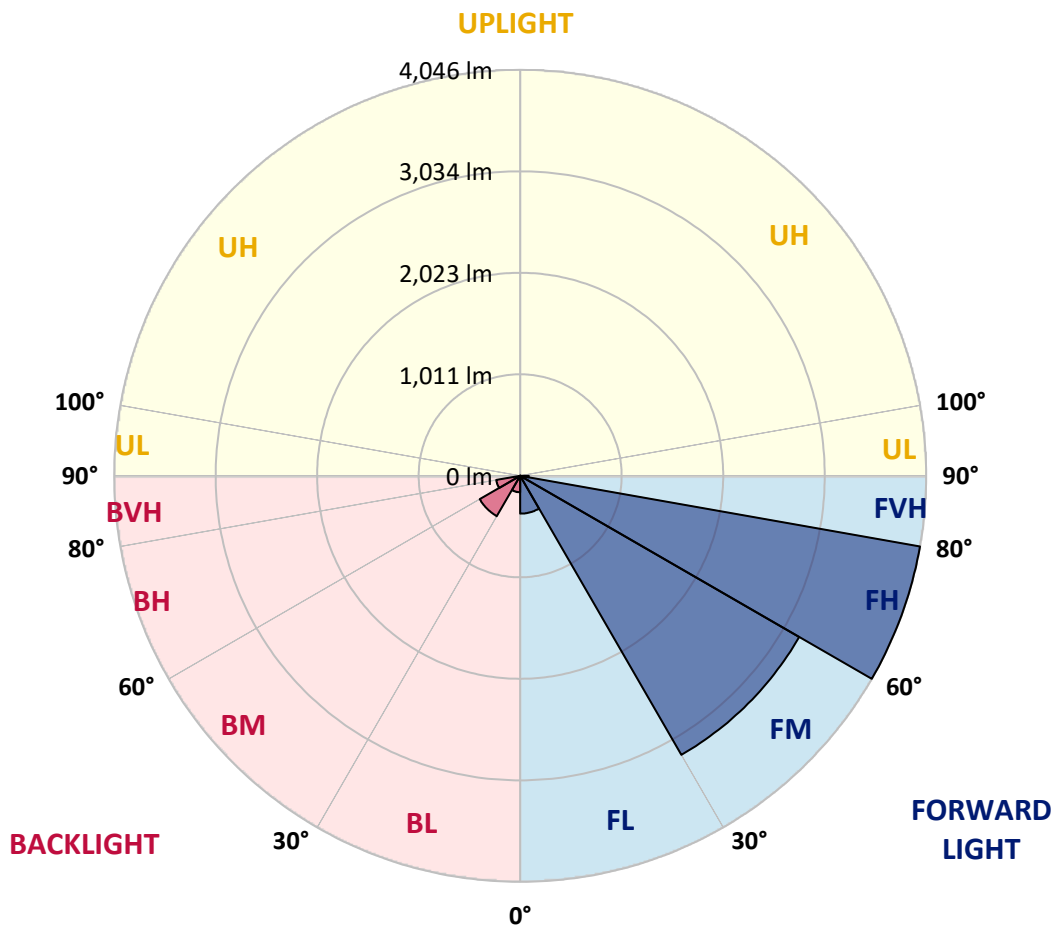


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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 376.9 | 4.4 | | | |
| FM (30°-60°) | 3210.7 | 37.4 | | | |
| FH (60°-80°) | 4045.7 | 47.1 | | | G2/5000 |
| FVH (80°-90°) | 86.0 | 1.0 | | | G1/100 |
| BL (0°-30°) | 163.9 | 1.9 | B1/500 | | |
| BM (30°-60°) | 464.9 | 5.4 | B1/1000 | | |
| BH (60°-80°) | 242.2 | 2.8 | B1/500 | | G1/500 |
| BVH (80°-90°) | 1.8 | 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 IV Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 44° | 45° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 289.5 | 289.5 | 289.5 | 289.5 | 289.5 | 289.5 | 289.5 | 289.5 | 289.5 | 289.5 | 289.5 |
| 2.5° | 368.1 | 356.3 | 339.2 | 343.0 | 344.9 | 350.1 | 350.6 | 344.0 | 325.0 | 319.8 | 343.0 |
| 5° | 515.9 | 487.0 | 481.8 | 470.9 | 449.1 | 437.3 | 434.5 | 446.3 | 431.1 | 426.4 | 432.6 |
| 7.5° | 659.0 | 634.4 | 607.4 | 592.7 | 547.2 | 519.3 | 517.8 | 522.6 | 525.4 | 508.8 | 517.4 |
| 10° | 754.3 | 727.3 | 721.6 | 687.0 | 647.7 | 641.0 | 638.2 | 620.2 | 605.5 | 593.2 | 552.0 |
| 12.5° | 840.5 | 840.0 | 850.4 | 800.7 | 794.5 | 801.2 | 798.8 | 734.4 | 719.7 | 668.0 | 656.2 |
| 15° | 955.1 | 983.6 | 938.6 | 896.9 | 843.8 | 866.5 | 860.4 | 819.2 | 809.2 | 774.2 | 723.5 |
| 17.5° | 1074.1 | 1081.6 | 1006.3 | 942.4 | 928.6 | 898.8 | 904.9 | 890.2 | 840.0 | 868.0 | 817.7 |
| 20° | 1076.9 | 1093.5 | 1012.9 | 907.3 | 949.5 | 948.0 | 948.5 | 934.3 | 868.0 | 933.4 | 887.4 |
| 22.5° | 1116.7 | 1076.0 | 1001.1 | 933.8 | 941.4 | 948.5 | 956.1 | 938.6 | 924.4 | 940.5 | 949.0 |
| 25° | 1100.6 | 1084.5 | 1012.5 | 967.9 | 960.8 | 966.5 | 968.4 | 990.7 | 981.7 | 1020.5 | 999.2 |
| 27.5° | 1142.3 | 1119.1 | 990.2 | 998.3 | 973.2 | 966.5 | 955.1 | 1029.5 | 1056.1 | 1025.3 | 1082.1 |
| 30° | 1213.8 | 1210.5 | 1028.6 | 1040.4 | 1021.0 | 962.7 | 993.0 | 1090.2 | 1123.3 | 1104.4 | 1173.6 |
| 32.5° | 1325.6 | 1337.0 | 1140.9 | 1064.1 | 1074.1 | 1100.1 | 1088.8 | 1090.2 | 1174.0 | 1216.2 | 1271.2 |
| 35° | 1484.4 | 1478.2 | 1250.3 | 1154.1 | 1102.0 | 1106.3 | 1122.4 | 1199.6 | 1308.1 | 1305.3 | 1363.5 |
| 37.5° | 1796.1 | 1728.8 | 1444.1 | 1246.0 | 1261.7 | 1283.0 | 1271.2 | 1374.9 | 1385.3 | 1389.1 | 1528.4 |
| 40° | 2255.7 | 2166.1 | 1749.7 | 1439.8 | 1289.2 | 1383.4 | 1377.8 | 1403.3 | 1473.0 | 1499.0 | 1702.3 |
| 42.5° | 2861.2 | 2740.8 | 2287.4 | 1796.1 | 1421.8 | 1356.9 | 1392.0 | 1440.3 | 1674.3 | 1748.7 | 1971.4 |
| 45° | 3530.2 | 3286.6 | 2823.7 | 2304.0 | 1754.4 | 1553.1 | 1579.6 | 1669.6 | 1994.2 | 2117.3 | 2363.2 |
| 47.5° | 3963.7 | 3749.5 | 3354.9 | 2754.1 | 2101.2 | 1995.6 | 1997.9 | 2017.4 | 2369.9 | 2598.2 | 2928.0 |
| 50° | 4340.3 | 4112.4 | 3746.2 | 3224.6 | 2714.8 | 2514.8 | 2469.4 | 2379.8 | 2848.4 | 3160.6 | 3526.4 |
| 52.5° | 4871.9 | 4605.6 | 4137.5 | 3776.5 | 3414.6 | 2943.6 | 2927.5 | 2957.8 | 3412.7 | 3741.0 | 4139.9 |
| 55° | 5351.4 | 5027.8 | 4581.0 | 4353.6 | 4212.4 | 3573.7 | 3587.5 | 3638.2 | 4137.1 | 4311.0 | 4685.7 |
| 57.5° | 5563.2 | 5212.6 | 4982.8 | 4880.4 | 4805.1 | 4434.6 | 4388.2 | 4357.9 | 4708.5 | 4774.8 | 5257.6 |
| 60° | 5702.0 | 5368.4 | 5264.2 | 5287.9 | 5516.3 | 5123.0 | 5080.8 | 4904.6 | 5181.3 | 5235.8 | 5770.2 |
| 62.5° | 5614.3 | 5310.2 | 5332.4 | 5530.0 | 6036.9 | 5778.3 | 5656.5 | 5361.8 | 5567.9 | 5612.0 | 6138.3 |
| 65° | 5062.4 | 4745.4 | 5031.6 | 5509.6 | 6434.0 | 6427.8 | 6371.4 | 5783.9 | 5782.0 | 5838.4 | 6166.8 |
| 67.5° | 4135.2 | 3802.6 | 4265.5 | 5127.8 | 6417.4 | 6821.5 | 6795.0 | 6344.0 | 5812.8 | 5662.2 | 5565.1 |
| 70° | 2874.9 | 2586.4 | 3111.3 | 4234.7 | 5845.5 | 6818.7 | 6776.0 | 6720.1 | 5569.3 | 4873.8 | 4314.7 |
| 72.5° | 1493.8 | 1335.1 | 1824.1 | 2918.0 | 4659.7 | 5991.0 | 6131.7 | 6039.8 | 4755.4 | 3541.1 | 2540.9 |
| 75° | 507.4 | 455.3 | 752.4 | 1548.8 | 3097.6 | 4574.8 | 4739.7 | 4646.4 | 3229.8 | 1899.9 | 1004.9 |
| 77.5° | 196.6 | 182.9 | 269.6 | 628.7 | 1554.0 | 2787.7 | 2966.8 | 2871.6 | 1732.2 | 696.0 | 236.4 |
| 80° | 111.8 | 108.0 | 148.8 | 283.3 | 685.1 | 1386.8 | 1512.8 | 1372.1 | 624.4 | 234.5 | 61.6 |
| 82.5° | 47.4 | 48.8 | 82.9 | 153.0 | 344.4 | 489.4 | 545.8 | 497.9 | 261.5 | 160.6 | 22.7 |
| 85° | 10.4 | 12.8 | 39.3 | 85.3 | 144.5 | 139.8 | 146.4 | 162.5 | 160.6 | 118.0 | 9.9 |
| 87.5° | 0.0 | 0.0 | 12.3 | 23.2 | 34.6 | 22.7 | 18.0 | 31.7 | 49.3 | 47.4 | 4.3 |
| 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° | 289.5 | 289.5 | 289.5 | 289.5 | 289.5 | 289.5 | 289.5 | 289.5 | 289.5 | 289.5 | 289.5 |
| 2.5° | 347.3 | 342.5 | 312.7 | 310.8 | 312.7 | 307.5 | 307.0 | 296.1 | 297.1 | 321.7 | 323.6 |
| 5° | 432.6 | 408.9 | 383.3 | 375.2 | 367.7 | 350.6 | 360.1 | 360.1 | 360.1 | 375.7 | 380.4 |
| 7.5° | 509.8 | 478.0 | 442.0 | 411.7 | 382.3 | 361.0 | 375.7 | 386.1 | 392.3 | 412.7 | 422.1 |
| 10° | 544.9 | 513.6 | 481.4 | 438.2 | 415.5 | 407.5 | 390.4 | 381.4 | 392.3 | 388.0 | 393.2 |
| 12.5° | 619.7 | 591.3 | 535.8 | 491.3 | 474.3 | 446.8 | 396.6 | 361.5 | 338.3 | 334.5 | 333.5 |
| 15° | 692.7 | 675.1 | 600.8 | 541.1 | 481.8 | 418.4 | 332.6 | 286.2 | 261.5 | 257.3 | 257.7 |
| 17.5° | 785.1 | 759.9 | 650.5 | 564.7 | 464.3 | 350.1 | 256.8 | 217.0 | 215.1 | 225.5 | 226.5 |
| 20° | 846.7 | 805.4 | 675.6 | 545.3 | 406.5 | 264.8 | 200.9 | 191.4 | 206.6 | 225.5 | 223.6 |
| 22.5° | 905.4 | 860.9 | 708.8 | 528.3 | 315.1 | 200.9 | 184.8 | 185.7 | 198.5 | 218.9 | 224.1 |
| 25° | 944.2 | 928.1 | 749.5 | 488.5 | 240.2 | 173.9 | 176.7 | 183.8 | 194.7 | 214.1 | 214.1 |
| 27.5° | 1061.3 | 985.9 | 744.8 | 411.2 | 184.8 | 162.0 | 168.7 | 177.7 | 183.4 | 206.6 | 208.9 |
| 30° | 1132.3 | 1107.7 | 769.4 | 332.6 | 162.0 | 146.9 | 159.7 | 167.7 | 171.5 | 198.0 | 199.0 |
| 32.5° | 1219.5 | 1165.0 | 799.3 | 245.4 | 150.7 | 145.9 | 143.1 | 149.2 | 160.1 | 183.4 | 184.8 |
| 35° | 1325.6 | 1309.5 | 756.6 | 192.8 | 146.9 | 136.4 | 130.8 | 134.1 | 141.2 | 156.8 | 160.1 |
| 37.5° | 1542.2 | 1446.5 | 731.0 | 165.4 | 146.9 | 133.1 | 127.0 | 118.4 | 119.4 | 130.3 | 136.4 |
| 40° | 1724.6 | 1695.2 | 659.5 | 160.6 | 140.2 | 128.4 | 113.2 | 102.8 | 95.7 | 99.0 | 101.4 |
| 42.5° | 2059.5 | 1923.6 | 567.1 | 158.2 | 134.1 | 116.1 | 96.2 | 85.3 | 74.4 | 75.3 | 79.1 |
| 45° | 2466.0 | 2172.8 | 484.7 | 155.9 | 129.8 | 103.8 | 81.0 | 68.2 | 56.9 | 57.3 | 61.1 |
| 47.5° | 3009.0 | 2536.2 | 384.7 | 148.8 | 122.2 | 92.4 | 65.4 | 52.1 | 45.5 | 46.9 | 50.2 |
| 50° | 3625.9 | 2855.0 | 304.2 | 137.9 | 113.2 | 81.5 | 53.1 | 42.2 | 39.8 | 41.2 | 45.0 |
| 52.5° | 4176.9 | 3090.0 | 251.1 | 127.9 | 100.4 | 66.3 | 44.5 | 37.4 | 36.5 | 37.4 | 40.3 |
| 55° | 4666.8 | 3226.5 | 209.9 | 116.6 | 86.2 | 53.5 | 40.3 | 34.6 | 34.1 | 33.6 | 35.5 |
| 57.5° | 5126.3 | 3265.8 | 163.9 | 98.5 | 70.1 | 46.4 | 37.4 | 32.2 | 31.3 | 29.8 | 31.3 |
| 60° | 5461.3 | 3198.5 | 120.3 | 79.1 | 57.3 | 42.2 | 35.1 | 28.9 | 27.5 | 25.1 | 26.1 |
| 62.5° | 5622.9 | 3014.2 | 91.0 | 63.5 | 48.8 | 38.4 | 31.3 | 25.1 | 23.2 | 20.4 | 20.8 |
| 65° | 5469.4 | 2710.5 | 71.5 | 53.5 | 41.7 | 32.2 | 26.5 | 21.3 | 19.0 | 16.1 | 16.1 |
| 67.5° | 4789.5 | 2248.6 | 60.6 | 46.4 | 35.1 | 27.5 | 21.8 | 19.4 | 15.6 | 13.3 | 12.8 |
| 70° | 3515.5 | 1617.5 | 52.1 | 40.7 | 30.3 | 23.7 | 18.5 | 17.5 | 15.2 | 12.8 | 11.8 |
| 72.5° | 1984.2 | 915.3 | 44.5 | 36.0 | 25.6 | 19.9 | 15.6 | 16.1 | 14.7 | 11.8 | 10.9 |
| 75° | 757.1 | 308.4 | 37.0 | 29.8 | 20.8 | 15.2 | 13.3 | 13.3 | 13.3 | 9.9 | 8.5 |
| 77.5° | 187.6 | 78.6 | 29.4 | 24.2 | 16.6 | 9.9 | 10.9 | 11.4 | 11.4 | 8.5 | 6.2 |
| 80° | 51.6 | 26.5 | 17.5 | 17.5 | 11.8 | 5.7 | 7.6 | 7.6 | 6.2 | 2.8 | 0.0 |
| 82.5° | 19.0 | 9.9 | 6.2 | 7.6 | 5.2 | 1.9 | 2.8 | 1.9 | 1.4 | 0.0 | 0.0 |
| 85° | 8.1 | 5.2 | 3.8 | 4.3 | 2.4 | 0.0 | 0.5 | 0.9 | 0.0 | 0.0 | 0.0 |
| 87.5° | 3.3 | 2.4 | 1.9 | 1.9 | 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)