

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: P596440

Luminaire Tested: **MSA-SA4C-722-U-SL4**

Issue Date: 5/27/2021

Test Information

Test Method: LM-79-08
Report Number: P596440
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-20)
Test Lab: INNOVATIONS CENTER
Issue Date: 5/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: MSA-SA4C-722-U-SL4
Description: MESA POST TOP DECORATIVE LUMINAIRE. (4) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV SPILL LIGHT ELIMINATOR OPTICS.
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 17230 lumens
Efficiency: N/A
Efficacy: 76.6 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B2 - U0 - G4

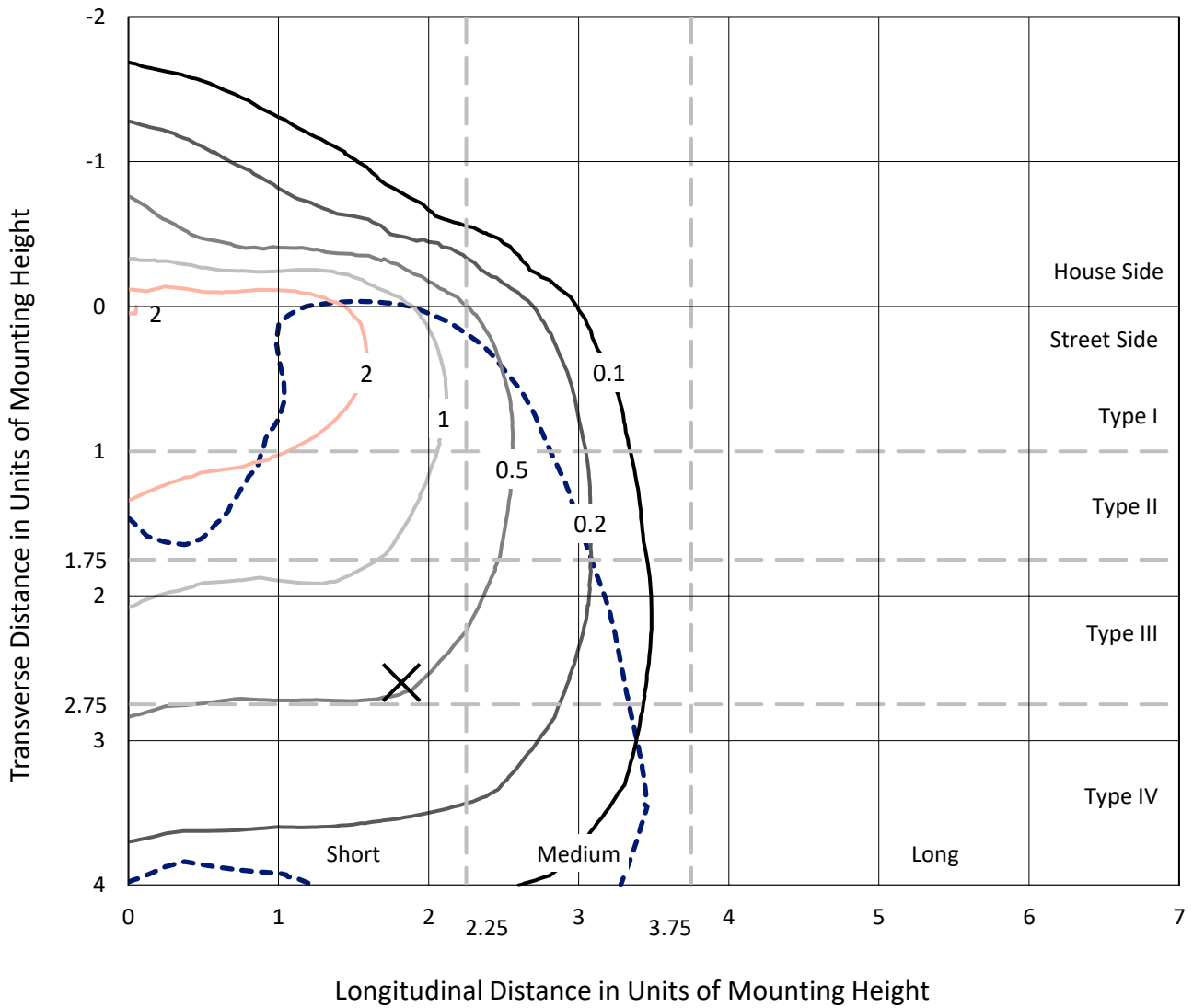
Input Watts (W): 225
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

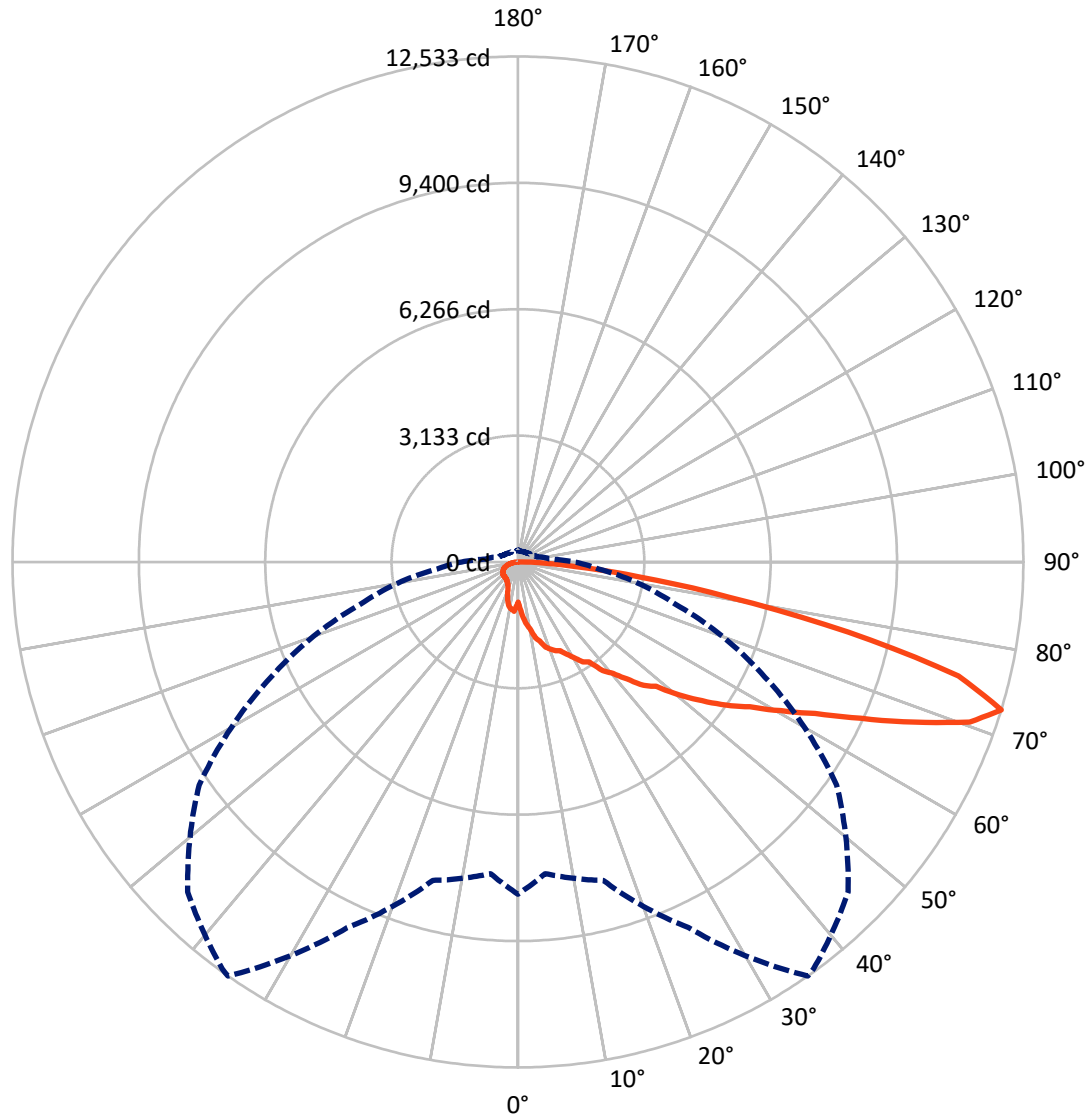
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 3.5 fc
 Type IV - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 35-Deg Lateral - - - Horizontal Cone Through 72.5-Deg Vertical

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FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 2312.2 | 0.0 | 2312.2 |
| | % Fixture | 13.4 | 0.0 | 13.4 |
| Street Side | Lumens | 14917.8 | 0.0 | 14917.8 |
| | % Fixture | 86.6 | 0.0 | 86.6 |
| Total | Lumens | 17230.0 | 0.0 | 17230.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 132.3 | 0.8 |
| 10°-20° | 466.2 | 2.7 |
| 20°-30° | 810.0 | 4.7 |
| 30°-40° | 1353.8 | 7.9 |
| 40°-50° | 2349.6 | 13.6 |
| 50°-60° | 3552.0 | 20.6 |
| 60°-70° | 4601.6 | 26.7 |
| 70°-80° | 3395.5 | 19.7 |
| 80°-90° | 569.1 | 3.3 |
| 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° | 17230.0 | 100.0 |
| 0°-180° | 17230.0 | 100.0 |

Coefficient of Utilization



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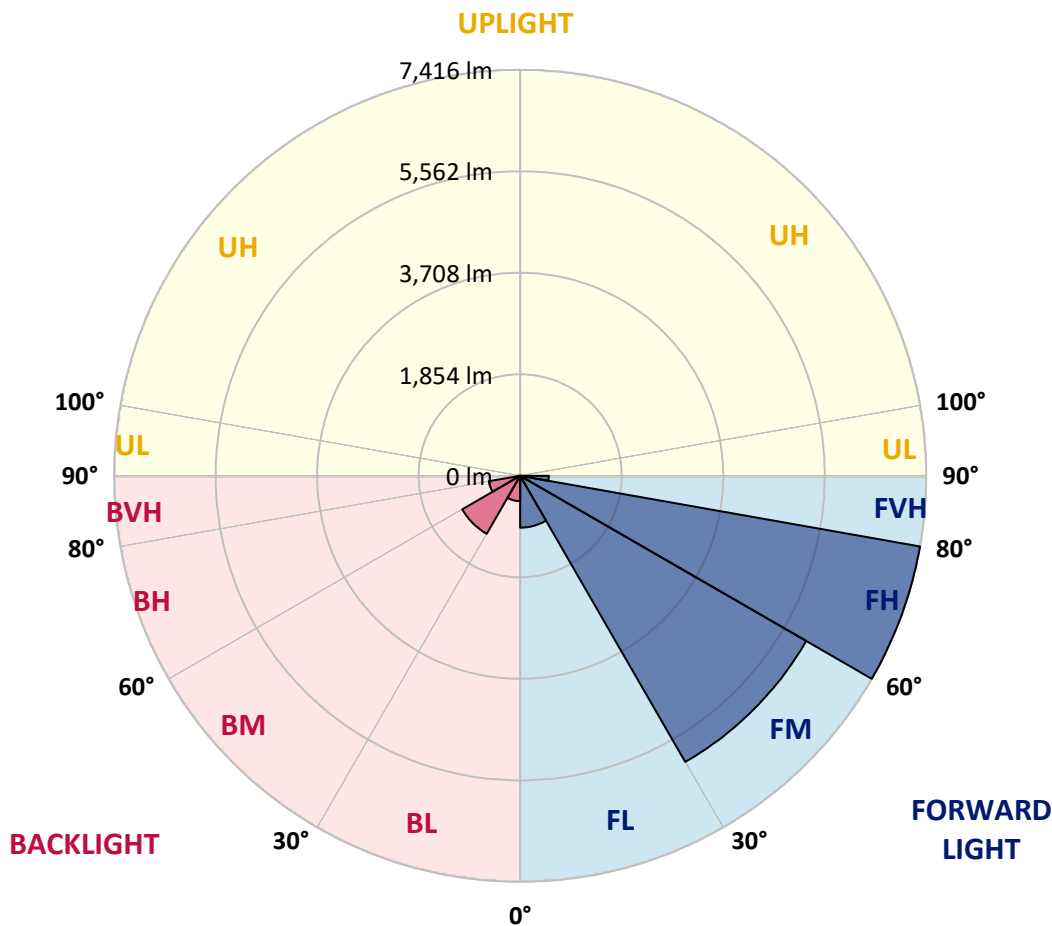
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 946.3 | 5.5 | | | |
| FM (30°-60°) | 6033.3 | 35.0 | | | |
| FH (60°-80°) | 7415.7 | 43.0 | | | G3/7500 |
| FVH (80°-90°) | 522.5 | 3.0 | | | G4/750 |
| BL (0°-30°) | 462.2 | 2.7 | B1/500 | | |
| BM (30°-60°) | 1222.0 | 7.1 | B2/2500 | | |
| BH (60°-80°) | 581.4 | 3.4 | B2/1000 | | G2/1000 |
| BVH (80°-90°) | 46.6 | 0.3 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B2-U0-G4

Type IV Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 36° | 45° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|---------|---------|---------|---------|---------|--------|--------|--------|
| 0° | 995.7 | 995.7 | 995.7 | 995.7 | 995.7 | 995.7 | 995.7 | 995.7 | 995.7 | 995.7 | 995.7 |
| 2.5° | 1242.1 | 1182.5 | 1131.0 | 1128.8 | 1176.6 | 1195.0 | 1187.7 | 1171.5 | 1152.4 | 1111.9 | 1200.2 |
| 5° | 1556.1 | 1470.8 | 1454.6 | 1435.5 | 1392.1 | 1403.9 | 1333.3 | 1387.0 | 1403.9 | 1442.9 | 1501.7 |
| 7.5° | 1741.4 | 1691.4 | 1652.4 | 1636.3 | 1561.3 | 1552.4 | 1500.2 | 1576.7 | 1609.1 | 1603.9 | 1691.4 |
| 10° | 1814.2 | 1768.6 | 1771.6 | 1718.6 | 1694.4 | 1704.7 | 1710.5 | 1712.0 | 1731.9 | 1748.0 | 1703.9 |
| 12.5° | 1851.7 | 1869.4 | 1934.1 | 1898.1 | 1928.9 | 1941.5 | 2003.2 | 1940.0 | 1942.2 | 1859.1 | 1904.7 |
| 15° | 2040.7 | 2084.9 | 2047.3 | 2045.9 | 2036.3 | 2056.9 | 2109.9 | 2067.2 | 2100.3 | 2073.8 | 2015.0 |
| 17.5° | 2268.7 | 2281.9 | 2209.9 | 2180.5 | 2218.7 | 2212.1 | 2198.8 | 2205.5 | 2123.1 | 2276.1 | 2204.0 |
| 20° | 2338.6 | 2390.8 | 2295.9 | 2180.5 | 2306.9 | 2323.9 | 2320.9 | 2292.2 | 2151.0 | 2371.7 | 2301.8 |
| 22.5° | 2541.5 | 2470.9 | 2395.9 | 2322.4 | 2387.1 | 2396.7 | 2380.5 | 2312.1 | 2265.0 | 2348.9 | 2404.0 |
| 25° | 2633.5 | 2616.5 | 2520.9 | 2512.1 | 2440.8 | 2407.0 | 2434.9 | 2415.0 | 2368.7 | 2518.0 | 2457.0 |
| 27.5° | 2843.8 | 2823.9 | 2604.0 | 2694.5 | 2590.8 | 2582.0 | 2434.2 | 2500.4 | 2546.7 | 2535.7 | 2626.8 |
| 30° | 3082.1 | 3104.9 | 2783.5 | 2873.9 | 2754.1 | 2737.9 | 2589.3 | 2673.2 | 2704.8 | 2715.1 | 2829.1 |
| 32.5° | 3346.8 | 3409.3 | 3090.1 | 3015.9 | 2951.9 | 2962.9 | 2837.2 | 2684.2 | 2807.0 | 3047.5 | 3096.8 |
| 35° | 3633.6 | 3659.3 | 3324.7 | 3213.0 | 3046.0 | 3034.3 | 3036.5 | 3055.6 | 3179.9 | 3454.2 | 3492.4 |
| 37.5° | 4163.8 | 4044.7 | 3751.3 | 3468.1 | 3412.2 | 3302.7 | 3376.9 | 3435.8 | 3560.1 | 3980.7 | 4141.0 |
| 40° | 4490.3 | 4402.1 | 3955.0 | 3791.0 | 3636.5 | 3646.8 | 3785.8 | 3785.1 | 4078.5 | 4512.4 | 4757.3 |
| 42.5° | 4792.6 | 4696.3 | 4274.9 | 4110.1 | 3963.8 | 3999.8 | 4039.5 | 4109.4 | 4672.0 | 5371.3 | 5483.1 |
| 45° | 5036.0 | 4824.9 | 4522.0 | 4485.2 | 4364.6 | 4316.8 | 4485.2 | 4597.0 | 5381.6 | 6066.3 | 6131.0 |
| 47.5° | 5201.5 | 5027.9 | 4731.6 | 4699.2 | 4610.2 | 4727.1 | 5186.8 | 5258.8 | 5931.7 | 6764.2 | 6759.0 |
| 50° | 5453.0 | 5215.4 | 4947.8 | 4930.8 | 5181.6 | 5244.1 | 5804.5 | 5797.1 | 6467.1 | 7343.7 | 7222.3 |
| 52.5° | 5742.7 | 5443.4 | 5152.9 | 5334.6 | 5717.0 | 5747.9 | 6234.0 | 6431.8 | 7051.7 | 7902.6 | 7585.6 |
| 55° | 6075.9 | 5741.3 | 5460.3 | 5703.0 | 6272.2 | 6181.0 | 6673.0 | 7156.2 | 7783.5 | 8491.6 | 7848.2 |
| 57.5° | 6488.4 | 6082.5 | 5855.2 | 6224.4 | 6778.9 | 6859.8 | 7301.8 | 7909.9 | 8372.5 | 8857.9 | 8039.4 |
| 60° | 6923.8 | 6447.2 | 6239.1 | 6590.6 | 7488.6 | 7581.2 | 8013.6 | 8536.5 | 9032.9 | 9202.8 | 8003.3 |
| 62.5° | 7339.3 | 6823.8 | 6635.5 | 7069.4 | 8275.4 | 8504.9 | 8824.0 | 9157.2 | 9582.2 | 9286.6 | 7567.2 |
| 65° | 7801.8 | 7285.6 | 7167.2 | 7818.0 | 9342.5 | 9570.5 | 9987.4 | 9887.4 | 9770.5 | 8989.5 | 6845.8 |
| 67.5° | 8291.6 | 7767.3 | 7789.3 | 8686.5 | 10600.8 | 10639.7 | 11280.3 | 10615.5 | 9549.1 | 8202.6 | 5634.6 |
| 70° | 8554.9 | 8018.0 | 8245.3 | 9612.4 | 11881.1 | 11825.2 | 11956.1 | 10811.1 | 8646.8 | 6484.0 | 3883.6 |
| 72.5° | 8235.7 | 7757.0 | 8173.2 | 10002.2 | 12532.7 | 12472.4 | 11576.6 | 9649.9 | 6760.5 | 4032.2 | 2013.5 |
| 75° | 6973.0 | 6511.2 | 7148.1 | 8916.0 | 11282.5 | 11338.4 | 9852.1 | 7176.0 | 3870.4 | 1621.6 | 836.1 |
| 77.5° | 4738.2 | 4499.9 | 5045.6 | 6645.8 | 8380.6 | 8574.0 | 7309.9 | 4196.2 | 1625.2 | 671.4 | 506.0 |
| 80° | 2504.0 | 2390.8 | 2793.8 | 3828.5 | 5306.6 | 5450.8 | 4298.4 | 2090.0 | 832.5 | 434.6 | 361.1 |
| 82.5° | 1360.5 | 1312.7 | 1528.9 | 1968.7 | 3015.1 | 3140.9 | 2229.0 | 1388.4 | 561.1 | 272.1 | 220.6 |
| 85° | 914.1 | 895.7 | 1039.1 | 1057.5 | 1425.9 | 1467.1 | 1167.8 | 1069.3 | 336.8 | 133.1 | 145.6 |
| 87.5° | 457.4 | 439.0 | 547.1 | 483.2 | 544.2 | 544.9 | 535.4 | 682.4 | 85.3 | 44.1 | 26.5 |
| 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° | 995.7 | 995.7 | 995.7 | 995.7 | 995.7 | 995.7 | 995.7 | 995.7 | 995.7 | 995.7 | 995.7 |
| 2.5° | 1201.6 | 1175.9 | 1086.9 | 1086.2 | 1099.4 | 1090.6 | 1097.2 | 1061.2 | 1045.7 | 1116.3 | 1112.7 |
| 5° | 1493.6 | 1416.4 | 1342.1 | 1316.4 | 1286.2 | 1220.8 | 1224.4 | 1225.2 | 1214.1 | 1256.1 | 1259.0 |
| 7.5° | 1664.9 | 1572.3 | 1503.9 | 1367.1 | 1259.7 | 1175.9 | 1186.9 | 1199.4 | 1186.9 | 1242.8 | 1263.4 |
| 10° | 1689.9 | 1616.4 | 1534.8 | 1382.5 | 1311.2 | 1235.5 | 1159.0 | 1091.3 | 1083.2 | 1057.5 | 1065.6 |
| 12.5° | 1838.5 | 1777.5 | 1606.8 | 1439.9 | 1356.8 | 1240.6 | 1100.9 | 1023.7 | 959.0 | 970.0 | 949.4 |
| 15° | 1960.6 | 1917.2 | 1712.7 | 1494.3 | 1295.8 | 1151.6 | 1003.1 | 897.2 | 839.1 | 832.5 | 811.9 |
| 17.5° | 2126.0 | 2064.3 | 1722.3 | 1456.8 | 1217.1 | 1044.3 | 876.6 | 756.7 | 731.7 | 721.4 | 711.1 |
| 20° | 2205.5 | 2094.4 | 1687.7 | 1339.2 | 1125.2 | 916.3 | 751.6 | 648.6 | 641.3 | 659.7 | 656.0 |
| 22.5° | 2274.6 | 2119.4 | 1656.9 | 1267.8 | 981.8 | 786.9 | 666.3 | 598.6 | 590.5 | 614.1 | 618.5 |
| 25° | 2315.0 | 2190.8 | 1623.0 | 1195.0 | 892.8 | 690.5 | 602.3 | 564.1 | 565.5 | 596.4 | 592.7 |
| 27.5° | 2497.4 | 2215.8 | 1537.7 | 1109.0 | 790.6 | 619.2 | 571.4 | 551.5 | 543.5 | 586.1 | 589.8 |
| 30° | 2612.1 | 2379.0 | 1518.6 | 1017.8 | 714.8 | 567.0 | 543.5 | 535.4 | 533.9 | 585.4 | 589.1 |
| 32.5° | 2825.4 | 2433.4 | 1527.4 | 918.5 | 646.4 | 550.8 | 522.9 | 522.1 | 536.8 | 586.1 | 592.0 |
| 35° | 3121.0 | 2662.9 | 1484.8 | 861.9 | 608.9 | 525.8 | 506.7 | 512.6 | 537.6 | 591.3 | 599.3 |
| 37.5° | 3697.6 | 2879.1 | 1498.0 | 808.9 | 596.4 | 517.7 | 502.3 | 506.0 | 546.4 | 604.5 | 626.6 |
| 40° | 4154.3 | 3271.1 | 1477.4 | 782.5 | 579.5 | 516.2 | 492.7 | 507.4 | 545.7 | 611.9 | 631.7 |
| 42.5° | 4816.1 | 3583.6 | 1479.6 | 756.0 | 578.8 | 510.4 | 491.2 | 508.9 | 544.2 | 605.2 | 632.4 |
| 45° | 5383.9 | 3863.8 | 1511.2 | 740.5 | 571.4 | 519.9 | 489.0 | 511.1 | 534.6 | 581.7 | 611.9 |
| 47.5° | 5849.4 | 4176.3 | 1543.6 | 725.8 | 568.5 | 528.8 | 486.8 | 495.7 | 518.5 | 555.2 | 582.4 |
| 50° | 6228.8 | 4396.2 | 1584.8 | 722.9 | 568.5 | 524.3 | 481.0 | 480.2 | 499.3 | 528.8 | 554.5 |
| 52.5° | 6524.5 | 4551.4 | 1612.7 | 726.6 | 568.5 | 507.4 | 473.6 | 467.7 | 479.5 | 500.8 | 526.5 |
| 55° | 6738.5 | 4599.2 | 1589.9 | 736.1 | 567.7 | 492.0 | 460.4 | 455.2 | 461.1 | 475.8 | 500.1 |
| 57.5° | 6824.5 | 4473.4 | 1453.9 | 719.2 | 567.7 | 481.0 | 444.2 | 438.3 | 444.2 | 455.2 | 479.5 |
| 60° | 6609.0 | 4069.0 | 1257.5 | 675.8 | 556.7 | 466.2 | 425.8 | 422.1 | 430.9 | 440.5 | 464.0 |
| 62.5° | 6068.5 | 3531.4 | 1047.9 | 624.4 | 533.9 | 453.7 | 408.1 | 408.9 | 422.9 | 436.1 | 459.6 |
| 65° | 5228.7 | 2881.3 | 873.7 | 572.1 | 505.2 | 433.9 | 389.8 | 394.9 | 414.8 | 432.4 | 455.9 |
| 67.5° | 4114.6 | 2134.9 | 735.4 | 521.4 | 464.8 | 401.5 | 369.2 | 370.6 | 384.6 | 401.5 | 424.3 |
| 70° | 2750.4 | 1358.3 | 604.5 | 461.8 | 411.8 | 359.6 | 337.5 | 332.4 | 328.7 | 343.4 | 363.3 |
| 72.5° | 1395.1 | 802.3 | 496.4 | 394.9 | 354.5 | 314.0 | 297.1 | 283.9 | 273.6 | 282.4 | 297.8 |
| 75° | 731.0 | 561.1 | 400.8 | 328.0 | 292.7 | 266.9 | 254.4 | 236.8 | 229.4 | 234.6 | 245.6 |
| 77.5° | 517.0 | 439.0 | 324.3 | 259.6 | 238.3 | 211.8 | 214.0 | 195.6 | 189.7 | 192.7 | 204.4 |
| 80° | 397.1 | 347.8 | 249.3 | 196.4 | 183.8 | 158.1 | 165.5 | 154.4 | 147.1 | 145.6 | 154.4 |
| 82.5° | 270.6 | 261.8 | 177.2 | 137.5 | 128.7 | 110.3 | 120.6 | 116.2 | 106.6 | 100.7 | 105.2 |
| 85° | 182.4 | 173.6 | 108.1 | 79.4 | 75.7 | 57.4 | 73.5 | 70.6 | 62.5 | 53.7 | 54.4 |
| 87.5° | 31.6 | 58.1 | 30.9 | 19.9 | 18.4 | 6.6 | 16.9 | 16.2 | 14.7 | 7.4 | 5.9 |
| 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)