

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: P367539

Luminaire Tested: **MSA-SA2D-727-U-T3-HSS**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P367539  
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-SA2D-727-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: 8330 lumens  
Efficiency: N/A  
Efficacy: 64.6 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')  
IES Classification: Type III - Short  
BUG Rating: B1 - U0 - G2

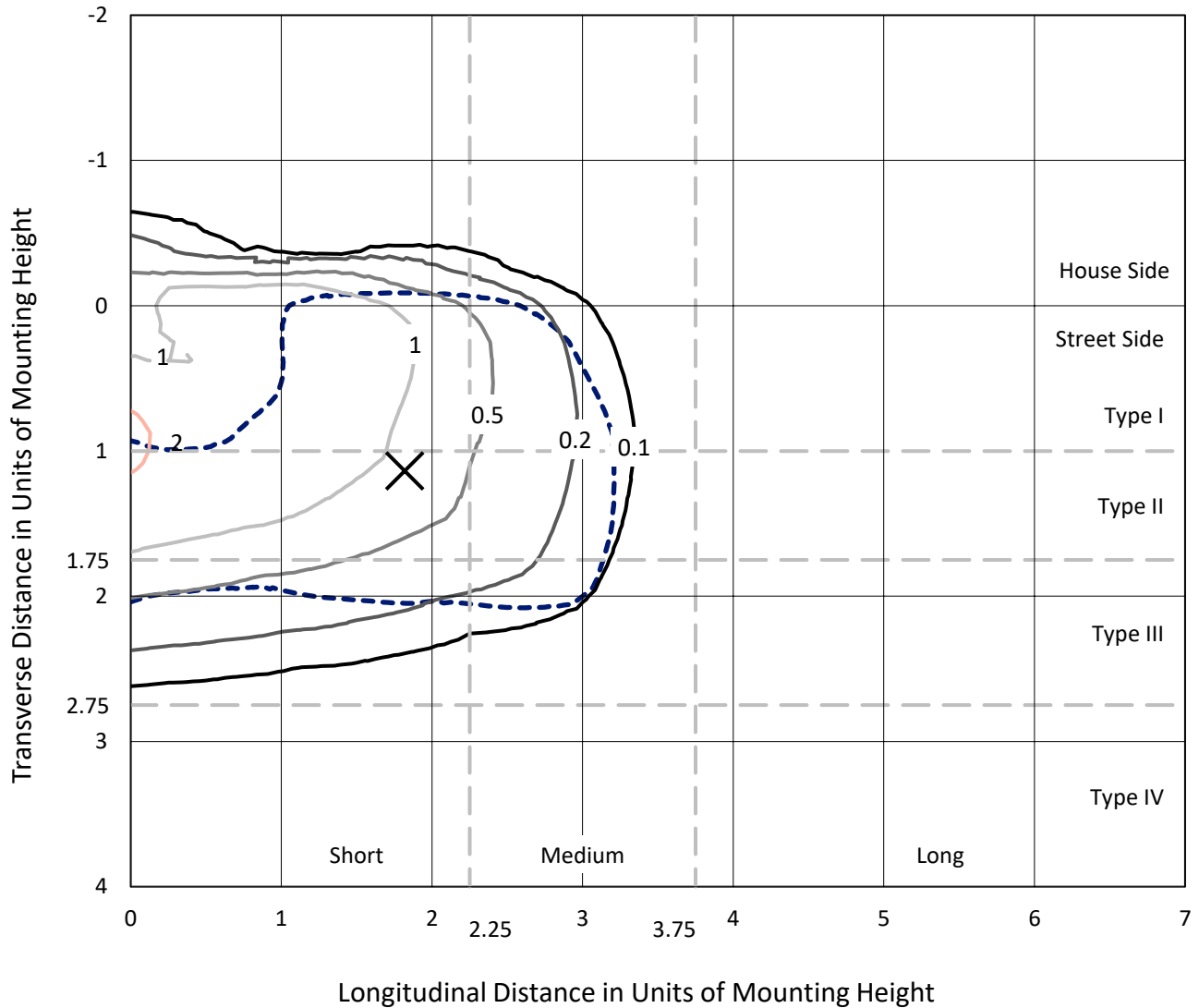
Input Watts (W): 129  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



REPORT NUMBER: P367539  
 CATALOG NUMBER: MSA-SA2D-727-U-T3-HSS

### Iso-Footcandle Lines of Horizontal Illumination

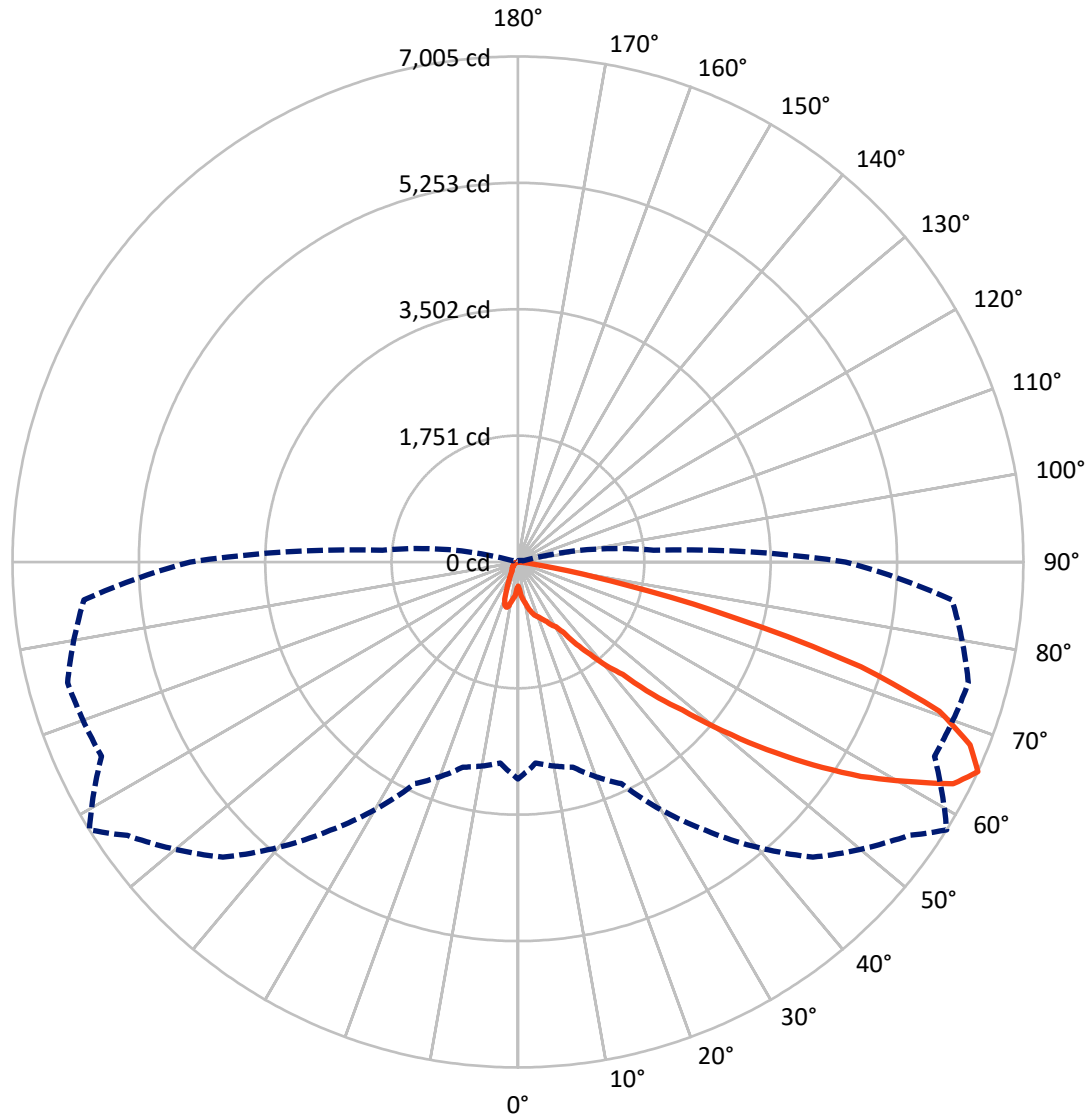
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 2.2 fc  
 Type III - Short - N/A

REPORT NUMBER: P367539  
CATALOG NUMBER: MSA-SA2D-727-U-T3-HSS

### Luminous Intensity Polar Plot



— Vertical Plane Through 58-Deg Lateral      - - - Horizontal Cone Through 65-Deg Vertical

REPORT NUMBER: P367539

CATALOG NUMBER: MSA-SA2D-727-U-T3-HSS

**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 822.0    | 0.0    | 822.0  |
|                    | % Fixture | 9.9      | 0.0    | 9.9    |
| <b>Street Side</b> | Lumens    | 7508.0   | 0.0    | 7508.0 |
|                    | % Fixture | 90.1     | 0.0    | 90.1   |
| <b>Total</b>       | Lumens    | 8330.0   | 0.0    | 8330.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 46.9   | 0.6       |
| 10°-20°   | 171.0  | 2.1       |
| 20°-30°   | 331.0  | 4.0       |
| 30°-40°   | 660.4  | 7.9       |
| 40°-50°   | 1350.0 | 16.2      |
| 50°-60°   | 2394.5 | 28.7      |
| 60°-70°   | 2524.4 | 30.3      |
| 70°-80°   | 818.4  | 9.8       |
| 80°-90°   | 33.5   | 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°    | 8330.0 | 100.0     |
| 0°-180°   | 8330.0 | 100.0     |

**Coefficient of Utilization**



REPORT NUMBER: P367539

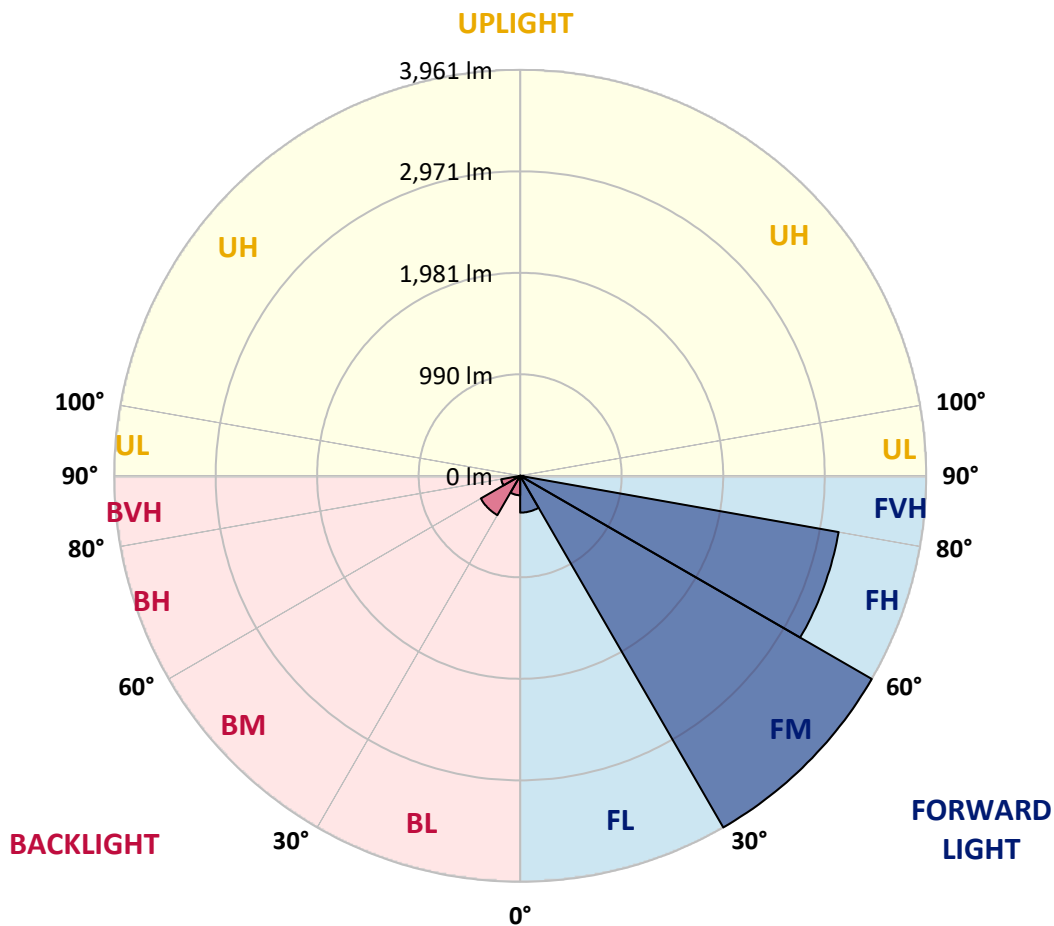
CATALOG NUMBER: MSA-SA2D-727-U-T3-HSS

**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone           | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|----------------|--------|-----------|-------------------------|------|---------|
|                |        |           | B                       | U    | G       |
| FL (0°-30°)    | 359.4  | 4.3       |                         |      |         |
| FM (30°-60°)   | 3961.3 | 47.6      |                         |      |         |
| FH (60°-80°)   | 3155.3 | 37.9      |                         |      | G2/5000 |
| FVH (80°-90°)  | 32.0   | 0.4       |                         |      | G1/100  |
| BL (0°-30°)    | 189.5  | 2.3       | B1/500                  |      |         |
| BM (30°-60°)   | 443.5  | 5.3       | B1/1000                 |      |         |
| BH (60°-80°)   | 187.6  | 2.3       | B1/500                  |      | G1/500  |
| BVH (80°-90°)  | 1.4    | 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-G2**

Type III Short





REPORT NUMBER: P367539

CATALOG NUMBER: MSA-SA2D-727-U-T3-HSS

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 58°    | 65°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 333.5  | 333.5  | 333.5  | 333.5  | 333.5  | 333.5  | 333.5  | 333.5  | 333.5  | 333.5  | 333.5  |
| 2.5°  | 407.1  | 394.9  | 375.7  | 379.0  | 382.7  | 390.2  | 384.1  | 378.5  | 372.4  | 364.4  | 394.9  |
| 5°    | 491.5  | 471.4  | 469.5  | 465.3  | 462.0  | 461.5  | 469.0  | 466.7  | 469.9  | 485.0  | 500.4  |
| 7.5°  | 522.5  | 514.0  | 498.1  | 504.6  | 494.3  | 486.4  | 519.7  | 530.4  | 551.1  | 558.1  | 598.5  |
| 10°   | 519.2  | 507.0  | 513.6  | 516.8  | 523.9  | 553.0  | 574.1  | 585.8  | 603.6  | 642.1  | 634.1  |
| 12.5° | 534.2  | 545.0  | 552.0  | 552.5  | 588.6  | 642.1  | 657.1  | 666.9  | 698.8  | 713.8  | 753.2  |
| 15°   | 584.4  | 602.2  | 590.9  | 595.6  | 607.4  | 672.6  | 707.7  | 729.3  | 774.3  | 823.1  | 833.0  |
| 17.5° | 656.1  | 667.4  | 643.9  | 627.1  | 659.4  | 695.1  | 758.9  | 781.4  | 810.0  | 923.9  | 945.0  |
| 20°   | 746.7  | 765.9  | 715.2  | 648.2  | 690.8  | 733.1  | 802.5  | 813.3  | 843.7  | 992.4  | 1025.7 |
| 22.5° | 958.2  | 929.6  | 852.2  | 747.6  | 734.9  | 753.7  | 819.8  | 862.0  | 913.6  | 1030.9 | 1108.3 |
| 25°   | 1166.9 | 1157.0 | 1043.1 | 926.3  | 841.9  | 799.7  | 887.4  | 910.8  | 995.2  | 1122.3 | 1165.0 |
| 27.5° | 1399.0 | 1418.7 | 1228.3 | 1157.5 | 991.9  | 854.1  | 929.6  | 988.2  | 1088.1 | 1155.6 | 1258.3 |
| 30°   | 1705.3 | 1673.9 | 1450.6 | 1379.8 | 1190.8 | 1003.7 | 1038.8 | 1042.6 | 1189.4 | 1265.4 | 1362.9 |
| 32.5° | 1945.4 | 1965.6 | 1685.1 | 1576.3 | 1425.3 | 1234.0 | 1120.9 | 1169.7 | 1274.8 | 1444.1 | 1536.5 |
| 35°   | 2205.3 | 2203.4 | 1930.0 | 1783.6 | 1586.2 | 1422.0 | 1364.3 | 1400.0 | 1531.8 | 1723.6 | 1748.0 |
| 37.5° | 2593.6 | 2560.3 | 2237.6 | 2023.3 | 1855.4 | 1715.2 | 1671.1 | 1623.7 | 1759.7 | 1942.6 | 2034.1 |
| 40°   | 2959.9 | 2845.0 | 2546.7 | 2292.5 | 2077.7 | 2020.5 | 1861.0 | 1890.1 | 1930.4 | 2172.0 | 2424.8 |
| 42.5° | 3329.9 | 3258.6 | 2860.0 | 2647.1 | 2383.0 | 2247.0 | 2142.9 | 2129.3 | 2321.1 | 2607.2 | 2868.4 |
| 45°   | 3818.2 | 3600.1 | 3281.2 | 3094.0 | 2788.2 | 2651.8 | 2567.8 | 2618.0 | 2790.6 | 3208.5 | 3382.5 |
| 47.5° | 4228.1 | 4027.3 | 3753.4 | 3469.2 | 3148.4 | 3301.8 | 3144.2 | 3064.9 | 3301.8 | 3733.8 | 3965.0 |
| 50°   | 4580.3 | 4356.6 | 4079.4 | 3868.8 | 3816.8 | 3964.0 | 3645.1 | 3674.2 | 3828.0 | 4335.5 | 4465.9 |
| 52.5° | 4836.4 | 4600.9 | 4358.9 | 4257.2 | 4470.6 | 4544.7 | 4384.7 | 4320.5 | 4460.2 | 4848.6 | 4911.9 |
| 55°   | 5029.1 | 4788.1 | 4599.1 | 4739.3 | 5152.0 | 5127.6 | 5183.9 | 4964.4 | 5098.1 | 5383.7 | 5353.7 |
| 57.5° | 5040.9 | 4755.2 | 4644.6 | 4870.2 | 5436.7 | 5814.3 | 5978.9 | 5605.6 | 5681.5 | 5802.1 | 5734.5 |
| 60°   | 4672.2 | 4388.0 | 4379.1 | 4699.4 | 5519.3 | 5992.0 | 6352.2 | 6170.2 | 6068.5 | 6158.0 | 6030.0 |
| 62.5° | 3937.8 | 3738.9 | 3831.8 | 4185.9 | 5212.1 | 5894.0 | 6551.1 | 6770.1 | 6373.8 | 6393.9 | 6212.0 |
| 65°   | 3006.8 | 2798.1 | 2943.5 | 3389.5 | 4540.4 | 5784.2 | 6607.3 | 7004.6 | 6368.2 | 6461.0 | 6037.5 |
| 67.5° | 1991.4 | 1870.4 | 2035.0 | 2526.5 | 3609.9 | 5106.1 | 6578.3 | 6758.4 | 6166.0 | 6198.8 | 5389.8 |
| 70°   | 1028.1 | 998.5  | 1131.7 | 1519.6 | 2427.1 | 3922.8 | 6292.6 | 6194.2 | 5755.6 | 5340.1 | 4157.3 |
| 72.5° | 329.2  | 330.6  | 458.7  | 694.1  | 1308.5 | 2388.2 | 4836.9 | 4971.9 | 4605.6 | 3906.3 | 2538.3 |
| 75°   | 145.9  | 143.5  | 191.8  | 291.3  | 545.5  | 1070.7 | 3004.9 | 3150.8 | 2867.5 | 2149.0 | 1067.0 |
| 77.5° | 105.1  | 101.8  | 122.9  | 170.2  | 270.1  | 363.0  | 1408.9 | 1520.5 | 1300.1 | 744.8  | 244.4  |
| 80°   | 74.1   | 73.6   | 89.1   | 119.6  | 168.8  | 161.3  | 445.1  | 499.0  | 399.6  | 180.6  | 71.8   |
| 82.5° | 41.7   | 43.1   | 61.9   | 84.4   | 102.7  | 80.7   | 125.2  | 137.9  | 134.6  | 96.1   | 31.4   |
| 85°   | 20.2   | 22.5   | 40.3   | 61.0   | 53.9   | 31.4   | 44.6   | 48.3   | 56.3   | 55.8   | 15.9   |
| 87.5° | 0.0    | 0.0    | 16.4   | 27.7   | 14.5   | 4.7    | 13.6   | 15.5   | 15.0   | 17.8   | 3.8    |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |



REPORT NUMBER: P367539  
 CATALOG NUMBER: MSA-SA2D-727-U-T3-HSS

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°    | 105°  | 115°  | 125°  | 135°  | 145°  | 155°  | 165°  | 175°  | 180°  |
|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 333.5  | 333.5  | 333.5 | 333.5 | 333.5 | 333.5 | 333.5 | 333.5 | 333.5 | 333.5 | 333.5 |
| 2.5°  | 401.0  | 398.2  | 362.5 | 365.4 | 373.3 | 370.0 | 372.9 | 366.3 | 358.8 | 389.3 | 388.8 |
| 5°    | 507.0  | 485.9  | 474.6 | 464.3 | 466.2 | 445.1 | 457.3 | 462.9 | 462.0 | 479.3 | 484.0 |
| 7.5°  | 599.9  | 571.7  | 549.2 | 527.6 | 494.8 | 465.3 | 483.5 | 495.3 | 503.2 | 533.3 | 545.0 |
| 10°   | 643.5  | 620.5  | 611.6 | 569.4 | 545.9 | 527.6 | 505.6 | 489.6 | 496.2 | 488.2 | 496.2 |
| 12.5° | 739.2  | 723.7  | 689.4 | 646.8 | 618.6 | 581.1 | 499.0 | 430.5 | 388.3 | 388.8 | 386.0 |
| 15°   | 826.4  | 825.4  | 774.3 | 703.5 | 621.9 | 515.0 | 386.9 | 300.6 | 260.8 | 249.5 | 245.8 |
| 17.5° | 940.4  | 926.3  | 833.0 | 728.4 | 581.6 | 398.7 | 263.6 | 205.9 | 202.1 | 208.7 | 205.9 |
| 20°   | 1013.1 | 992.4  | 862.0 | 692.3 | 479.3 | 269.7 | 198.9 | 182.4 | 193.7 | 203.1 | 200.7 |
| 22.5° | 1085.7 | 1054.8 | 884.1 | 648.2 | 341.0 | 197.5 | 179.6 | 176.8 | 183.9 | 195.6 | 197.5 |
| 25°   | 1125.6 | 1119.5 | 927.2 | 565.6 | 233.6 | 173.1 | 173.1 | 172.1 | 174.5 | 182.9 | 181.5 |
| 27.5° | 1241.5 | 1158.9 | 894.9 | 441.3 | 180.6 | 159.0 | 161.3 | 160.4 | 152.0 | 160.4 | 160.9 |
| 30°   | 1313.7 | 1275.7 | 897.2 | 314.2 | 159.0 | 140.7 | 146.8 | 139.3 | 126.6 | 133.7 | 132.3 |
| 32.5° | 1459.1 | 1364.3 | 890.2 | 212.0 | 144.9 | 134.1 | 124.8 | 114.0 | 104.6 | 107.4 | 105.1 |
| 35°   | 1628.4 | 1556.2 | 795.0 | 170.2 | 135.1 | 118.7 | 103.7 | 92.9  | 83.0  | 85.4  | 84.9  |
| 37.5° | 1965.1 | 1735.8 | 716.2 | 153.4 | 128.5 | 108.8 | 91.5  | 76.4  | 71.3  | 72.7  | 74.1  |
| 40°   | 2277.0 | 2035.5 | 569.4 | 145.9 | 117.3 | 97.1  | 75.5  | 64.7  | 61.4  | 62.4  | 63.8  |
| 42.5° | 2743.2 | 2273.7 | 430.1 | 138.4 | 106.0 | 82.1  | 62.8  | 55.8  | 52.5  | 54.4  | 55.3  |
| 45°   | 3194.4 | 2476.3 | 321.3 | 131.8 | 96.6  | 70.8  | 53.0  | 48.3  | 44.6  | 46.0  | 47.8  |
| 47.5° | 3645.1 | 2701.5 | 239.7 | 121.5 | 86.3  | 61.0  | 45.5  | 42.2  | 39.9  | 40.3  | 42.7  |
| 50°   | 4048.5 | 2806.5 | 188.5 | 108.8 | 77.9  | 53.0  | 41.3  | 38.0  | 37.1  | 37.5  | 39.4  |
| 52.5° | 4344.9 | 2807.5 | 159.0 | 97.6  | 69.9  | 46.9  | 38.9  | 35.2  | 34.7  | 35.6  | 37.5  |
| 55°   | 4612.7 | 2732.4 | 137.9 | 87.7  | 62.8  | 42.7  | 37.1  | 33.8  | 33.8  | 34.7  | 36.6  |
| 57.5° | 4790.4 | 2594.5 | 119.6 | 77.4  | 56.7  | 40.3  | 35.6  | 32.4  | 31.9  | 31.4  | 32.8  |
| 60°   | 4877.2 | 2406.5 | 101.3 | 68.0  | 51.1  | 38.9  | 34.7  | 28.6  | 28.1  | 27.2  | 28.1  |
| 62.5° | 4822.3 | 2171.0 | 84.9  | 58.6  | 45.5  | 37.1  | 30.5  | 24.9  | 23.9  | 22.0  | 23.5  |
| 65°   | 4541.8 | 1884.9 | 71.8  | 50.2  | 39.4  | 31.4  | 25.8  | 21.1  | 18.8  | 16.4  | 15.9  |
| 67.5° | 3968.3 | 1531.3 | 60.0  | 43.1  | 33.8  | 25.8  | 21.1  | 18.8  | 14.5  | 12.7  | 12.2  |
| 70°   | 2974.0 | 1045.4 | 49.7  | 37.1  | 28.1  | 22.0  | 17.8  | 16.9  | 13.6  | 12.2  | 11.3  |
| 72.5° | 1744.7 | 564.2  | 41.7  | 32.4  | 23.9  | 18.3  | 14.5  | 15.5  | 13.6  | 11.3  | 10.3  |
| 75°   | 696.9  | 187.6  | 33.3  | 25.8  | 19.2  | 13.1  | 12.2  | 12.7  | 12.2  | 10.3  | 8.4   |
| 77.5° | 159.0  | 59.1   | 25.8  | 20.2  | 15.0  | 8.4   | 9.8   | 10.8  | 10.8  | 8.4   | 6.1   |
| 80°   | 49.7   | 23.5   | 15.0  | 12.7  | 10.8  | 4.7   | 7.0   | 7.5   | 5.2   | 2.3   | 0.0   |
| 82.5° | 15.9   | 6.6    | 5.2   | 5.2   | 4.7   | 0.9   | 1.4   | 0.9   | 0.0   | 0.0   | 0.0   |
| 85°   | 6.1    | 4.2    | 3.3   | 3.3   | 1.9   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 87.5° | 2.3    | 1.9    | 1.4   | 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)