

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: P596144

Luminaire Tested: **MSA-SA1A-722-U-T4W**

Issue Date: 5/27/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P596144  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-14)  
Test Lab: INNOVATIONS CENTER  
Issue Date: 5/27/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: INVUE  
Catalog Number: MSA-SA1A-722-U-T4W  
Description: MESA POST TOP DECORATIVE LUMINAIRE. (1) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV WIDE OPTICS.  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3012 lumens  
Efficiency: N/A  
Efficacy: 88.6 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B1 - U0 - G1

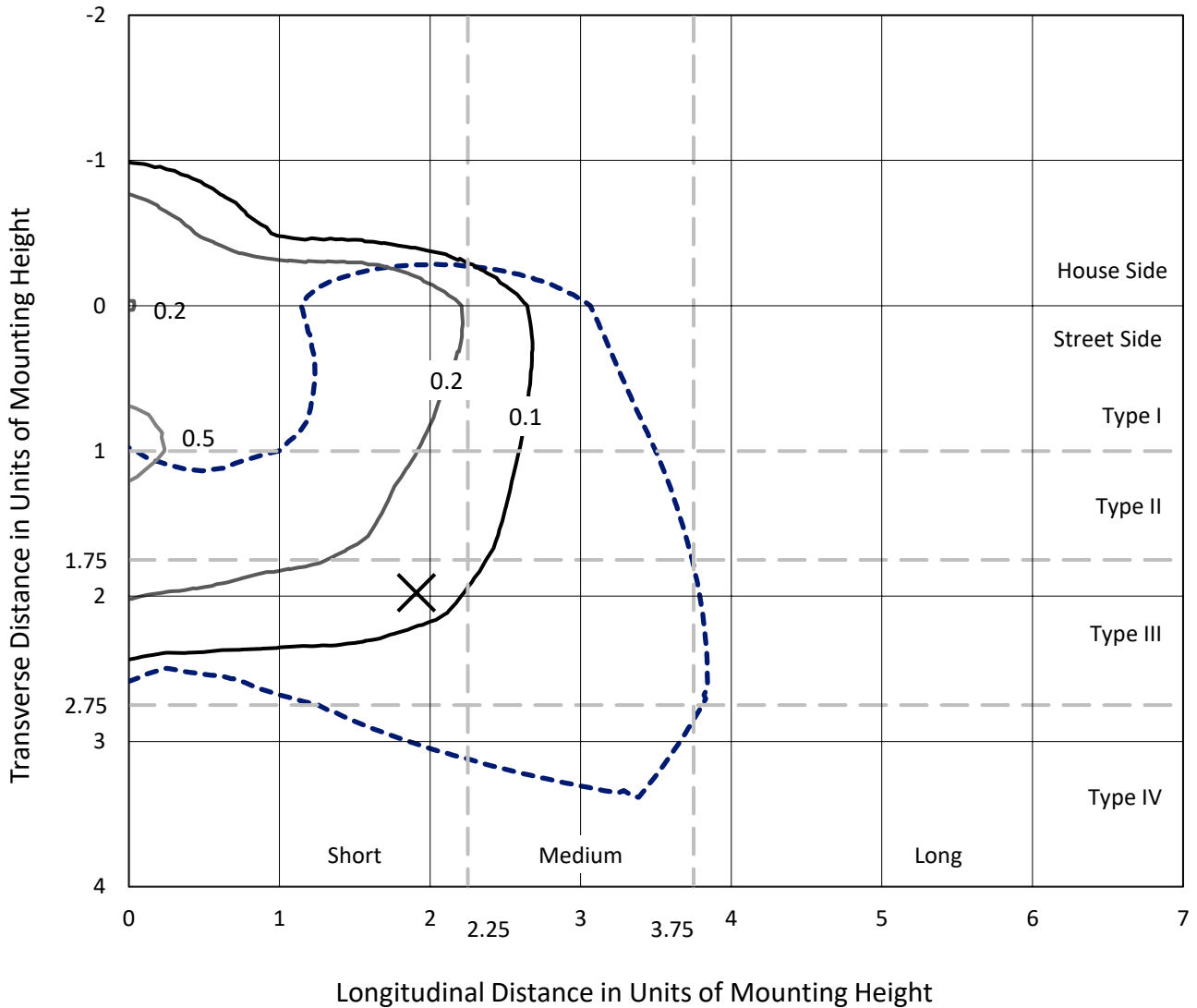
Input Watts (W): 34  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

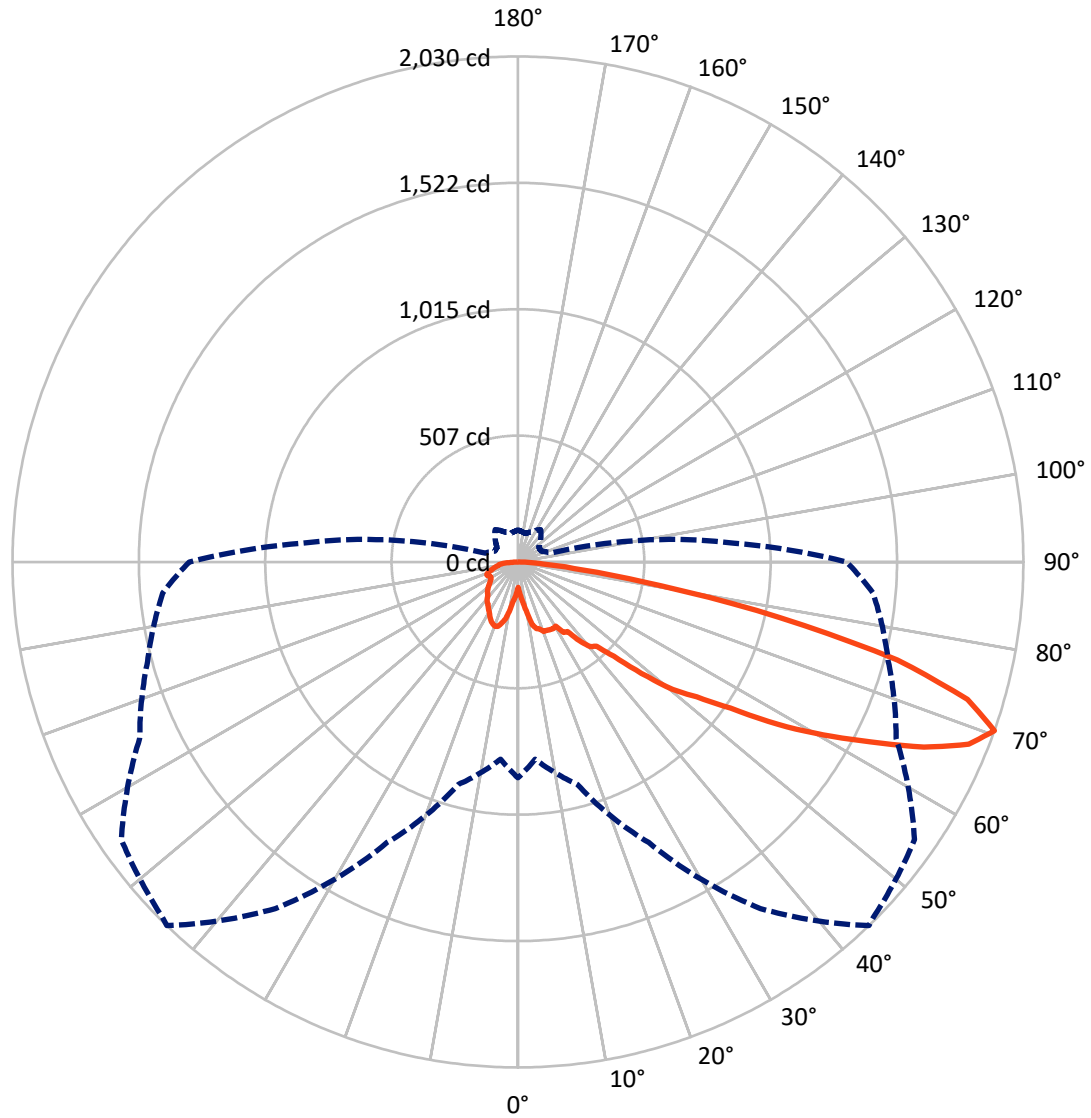
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 0.6 fc  
 Type IV - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 44-Deg Lateral      - - - Horizontal Cone Through 70-Deg Vertical

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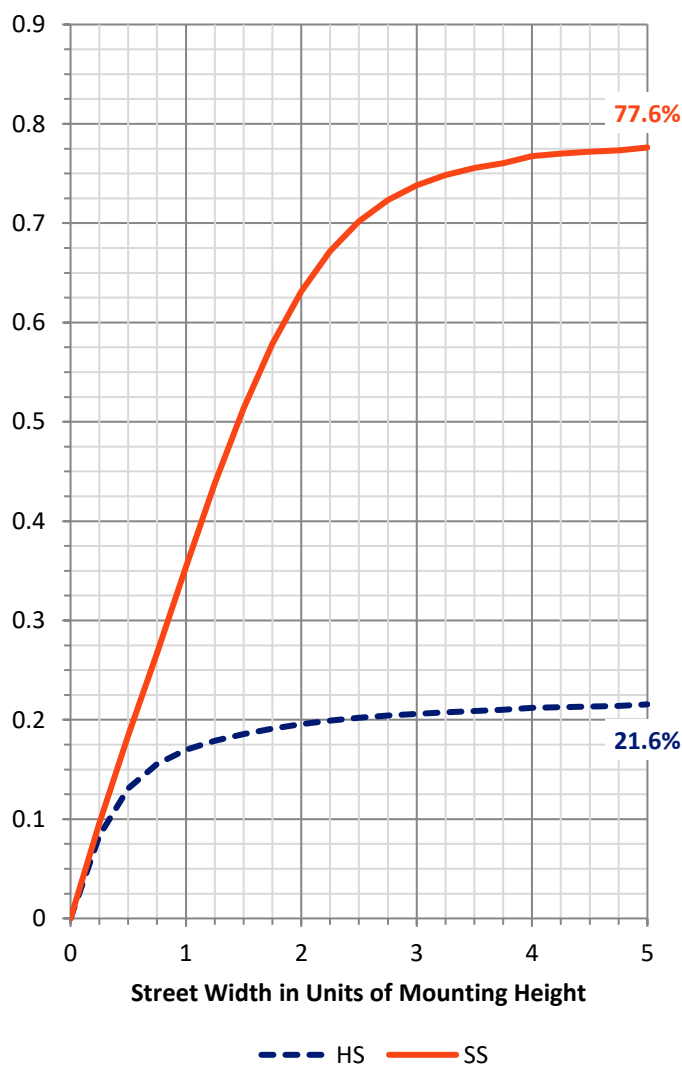
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 664.6    | 0.0    | 664.6  |
|                    | % Fixture | 22.1     | 0.0    | 22.1   |
| <b>Street Side</b> | Lumens    | 2347.4   | 0.0    | 2347.4 |
|                    | % Fixture | 77.9     | 0.0    | 77.9   |
| <b>Total</b>       | Lumens    | 3012.0   | 0.0    | 3012.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 16.1   | 0.5       |
| 10°-20°   | 73.9   | 2.5       |
| 20°-30°   | 138.1  | 4.6       |
| 30°-40°   | 221.7  | 7.4       |
| 40°-50°   | 374.3  | 12.4      |
| 50°-60°   | 666.9  | 22.1      |
| 60°-70°   | 912.3  | 30.3      |
| 70°-80°   | 536.5  | 17.8      |
| 80°-90°   | 72.2   | 2.4       |
| 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°    | 3012.0 | 100.0     |
| 0°-180°   | 3012.0 | 100.0     |

**Coefficient of Utilization**

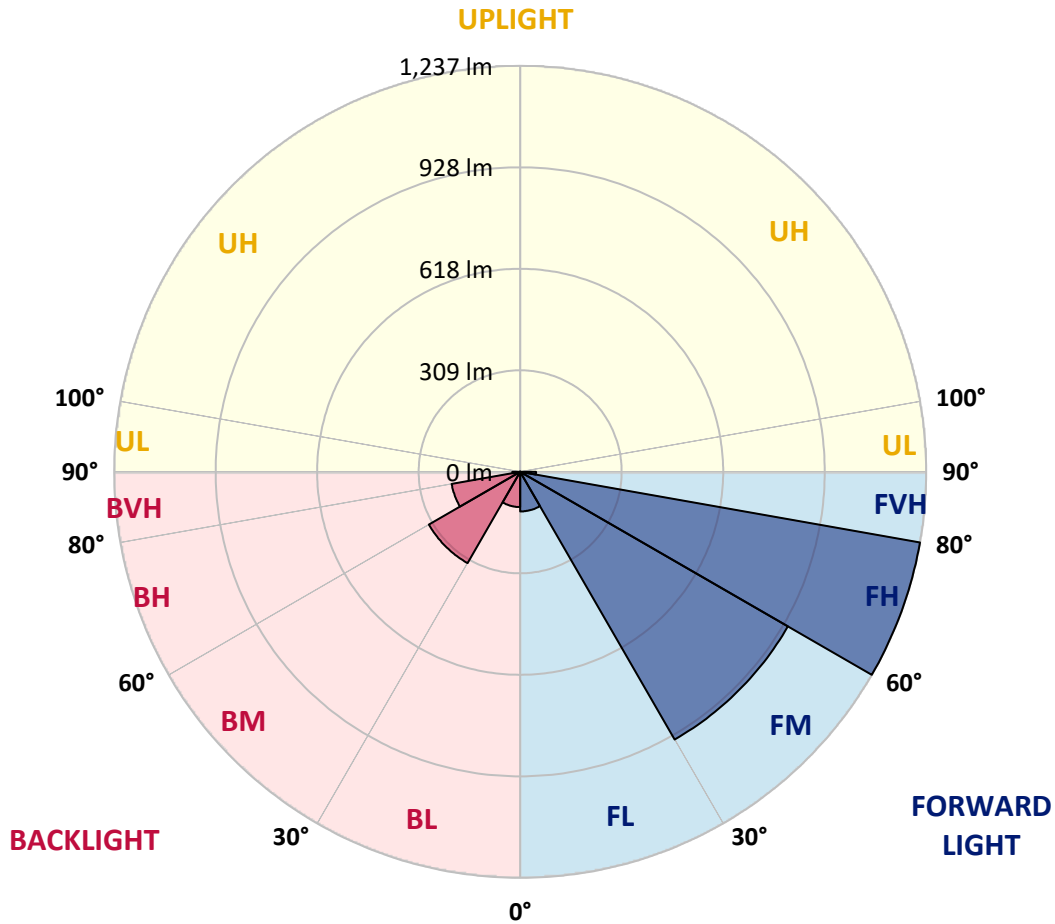


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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone           | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|----------------|--------|-----------|-------------------------|------|---------|
|                |        |           | B                       | U    | G       |
| FL (0°-30°)    | 120.7  | 4.0       |                         |      |         |
| FM (30°-60°)   | 941.8  | 31.3      |                         |      |         |
| FH (60°-80°)   | 1236.8 | 41.1      |                         |      | G1/1800 |
| FVH (80°-90°)  | 48.1   | 1.6       |                         |      | G1/100  |
| BL (0°-30°)    | 107.4  | 3.6       | B0/110                  |      |         |
| BM (30°-60°)   | 321.2  | 10.7      | B1/1000                 |      |         |
| BH (60°-80°)   | 211.9  | 7.0       | B1/500                  |      | G1/500  |
| BVH (80°-90°)  | 24.1   | 0.8       |                         |      | G1/100  |
| UL (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B1-U0-G1**  
 Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 44°    | 45°    | 55°    | 65°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 102.4  | 102.4  | 102.4  | 102.4  | 102.4  | 102.4  | 102.4  | 102.4  | 102.4  | 102.4  | 102.4  |
| 2.5°  | 124.2  | 121.8  | 115.8  | 117.8  | 120.3  | 121.3  | 121.0  | 120.8  | 117.0  | 115.6  | 122.4  |
| 5°    | 168.8  | 163.4  | 159.1  | 157.3  | 151.7  | 147.2  | 144.5  | 151.7  | 150.5  | 152.4  | 157.1  |
| 7.5°  | 210.8  | 207.4  | 197.6  | 194.1  | 182.5  | 174.9  | 174.0  | 179.7  | 181.2  | 178.2  | 186.2  |
| 10°   | 237.9  | 231.9  | 230.0  | 221.7  | 213.7  | 212.4  | 211.7  | 209.1  | 205.5  | 205.3  | 198.1  |
| 12.5° | 258.9  | 261.9  | 263.5  | 254.0  | 254.3  | 258.7  | 256.4  | 245.9  | 239.8  | 229.2  | 230.1  |
| 15°   | 296.5  | 301.0  | 288.2  | 282.2  | 270.6  | 277.3  | 276.4  | 267.6  | 266.8  | 259.8  | 251.8  |
| 17.5° | 329.4  | 331.4  | 310.1  | 296.3  | 292.3  | 282.7  | 285.3  | 285.5  | 274.2  | 286.5  | 279.4  |
| 20°   | 332.1  | 339.1  | 314.7  | 287.1  | 299.0  | 297.8  | 298.1  | 295.7  | 280.7  | 301.1  | 298.4  |
| 22.5° | 345.4  | 334.7  | 312.7  | 292.6  | 295.7  | 297.5  | 299.2  | 296.3  | 295.4  | 306.8  | 315.0  |
| 25°   | 343.0  | 339.5  | 317.3  | 300.2  | 300.6  | 301.0  | 301.8  | 310.7  | 309.7  | 325.2  | 329.5  |
| 27.5° | 366.1  | 360.7  | 318.6  | 314.4  | 304.8  | 302.7  | 296.8  | 315.3  | 329.7  | 329.4  | 353.2  |
| 30°   | 410.0  | 404.6  | 350.2  | 338.0  | 320.6  | 299.1  | 310.5  | 335.2  | 346.5  | 350.4  | 380.6  |
| 32.5° | 478.7  | 487.6  | 412.5  | 363.2  | 341.6  | 336.9  | 335.7  | 333.2  | 361.4  | 380.3  | 407.8  |
| 35°   | 577.2  | 570.2  | 485.9  | 417.2  | 363.7  | 343.6  | 346.3  | 361.4  | 394.8  | 407.1  | 432.5  |
| 37.5° | 690.1  | 675.5  | 579.8  | 478.3  | 427.4  | 402.2  | 393.2  | 407.8  | 415.2  | 424.8  | 476.8  |
| 40°   | 804.9  | 769.3  | 672.1  | 558.7  | 465.7  | 446.7  | 438.8  | 420.9  | 438.3  | 457.8  | 523.9  |
| 42.5° | 915.6  | 888.1  | 772.5  | 654.7  | 530.2  | 462.4  | 458.1  | 440.5  | 494.5  | 515.1  | 591.8  |
| 45°   | 1031.7 | 967.9  | 875.4  | 763.0  | 624.4  | 539.3  | 532.9  | 501.4  | 570.6  | 613.6  | 687.7  |
| 47.5° | 1109.8 | 1050.6 | 969.6  | 850.9  | 703.3  | 668.0  | 655.8  | 601.9  | 664.7  | 720.5  | 835.7  |
| 50°   | 1183.6 | 1122.7 | 1037.7 | 947.1  | 846.2  | 805.6  | 779.5  | 689.9  | 781.9  | 872.8  | 1025.5 |
| 52.5° | 1289.3 | 1234.9 | 1116.7 | 1044.1 | 999.7  | 899.8  | 880.4  | 831.2  | 919.0  | 1041.6 | 1233.0 |
| 55°   | 1402.3 | 1328.1 | 1221.0 | 1180.8 | 1162.9 | 1034.9 | 1019.1 | 987.8  | 1101.5 | 1214.4 | 1434.7 |
| 57.5° | 1452.2 | 1374.8 | 1315.8 | 1291.7 | 1290.2 | 1231.3 | 1213.1 | 1191.3 | 1288.1 | 1362.6 | 1624.5 |
| 60°   | 1491.9 | 1408.8 | 1385.2 | 1398.6 | 1447.5 | 1408.8 | 1385.2 | 1365.9 | 1440.0 | 1509.1 | 1779.4 |
| 62.5° | 1484.6 | 1401.2 | 1413.3 | 1454.3 | 1579.2 | 1590.6 | 1572.4 | 1525.7 | 1590.6 | 1629.1 | 1868.2 |
| 65°   | 1367.0 | 1290.0 | 1360.5 | 1457.8 | 1701.6 | 1792.4 | 1791.4 | 1669.2 | 1691.7 | 1691.7 | 1858.8 |
| 67.5° | 1161.0 | 1081.2 | 1196.7 | 1427.3 | 1786.2 | 1952.3 | 1952.5 | 1821.4 | 1701.0 | 1685.4 | 1713.6 |
| 70°   | 867.0  | 794.7  | 924.5  | 1243.0 | 1698.9 | 2029.7 | 2018.5 | 1944.1 | 1675.5 | 1539.6 | 1431.4 |
| 72.5° | 517.8  | 471.2  | 590.6  | 904.9  | 1449.2 | 1887.3 | 1917.2 | 1802.7 | 1533.9 | 1280.3 | 1023.2 |
| 75°   | 235.1  | 214.9  | 277.5  | 519.8  | 1034.6 | 1574.3 | 1606.7 | 1521.4 | 1218.3 | 920.8  | 591.3  |
| 77.5° | 100.7  | 95.2   | 121.2  | 230.6  | 570.4  | 1076.6 | 1143.1 | 1087.3 | 825.5  | 535.1  | 261.6  |
| 80°   | 64.7   | 61.3   | 74.5   | 110.9  | 264.9  | 581.7  | 639.0  | 618.1  | 420.5  | 208.1  | 92.1   |
| 82.5° | 38.7   | 37.5   | 49.8   | 69.7   | 144.5  | 256.0  | 288.5  | 296.2  | 174.6  | 93.4   | 52.7   |
| 85°   | 21.1   | 21.4   | 27.3   | 42.2   | 86.7   | 99.7   | 106.7  | 116.1  | 82.3   | 54.1   | 25.6   |
| 87.5° | 7.0    | 8.2    | 11.0   | 17.2   | 30.9   | 28.2   | 28.3   | 32.9   | 34.7   | 22.5   | 8.2    |
| 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°    | 102.4  | 102.4  | 102.4 | 102.4 | 102.4 | 102.4 | 102.4 | 102.4 | 102.4 | 102.4 | 102.4 |
| 2.5°  | 123.5  | 121.3  | 115.6 | 116.0 | 118.1 | 118.6 | 119.2 | 115.6 | 114.9 | 121.6 | 122.3 |
| 5°    | 157.8  | 150.5  | 147.2 | 146.1 | 142.9 | 141.8 | 147.7 | 150.4 | 153.1 | 158.5 | 161.0 |
| 7.5°  | 185.4  | 177.2  | 171.2 | 165.6 | 160.9 | 158.2 | 168.2 | 175.9 | 180.6 | 191.4 | 196.4 |
| 10°   | 198.0  | 190.9  | 188.7 | 184.3 | 187.8 | 196.0 | 197.8 | 198.1 | 208.5 | 208.2 | 210.3 |
| 12.5° | 223.0  | 218.5  | 211.2 | 212.8 | 222.2 | 230.6 | 228.2 | 231.8 | 235.5 | 244.4 | 240.3 |
| 15°   | 245.9  | 244.7  | 237.9 | 239.0 | 240.8 | 251.3 | 252.7 | 256.3 | 261.9 | 269.0 | 264.2 |
| 17.5° | 274.0  | 273.6  | 257.0 | 255.5 | 259.8 | 270.1 | 266.9 | 260.6 | 279.4 | 286.9 | 284.9 |
| 20°   | 293.2  | 289.5  | 268.2 | 261.9 | 272.9 | 274.3 | 270.6 | 260.6 | 276.9 | 293.3 | 297.8 |
| 22.5° | 309.1  | 304.8  | 282.9 | 270.6 | 268.4 | 269.0 | 269.0 | 267.1 | 275.2 | 288.6 | 288.5 |
| 25°   | 322.0  | 326.0  | 298.3 | 286.4 | 274.5 | 259.7 | 257.9 | 259.5 | 264.0 | 290.0 | 289.1 |
| 27.5° | 354.2  | 343.0  | 303.4 | 294.5 | 270.2 | 246.9 | 251.9 | 254.4 | 255.9 | 284.3 | 289.0 |
| 30°   | 375.2  | 378.7  | 322.0 | 299.4 | 263.9 | 232.6 | 234.3 | 241.4 | 250.1 | 283.7 | 285.0 |
| 32.5° | 403.5  | 396.1  | 350.9 | 291.3 | 247.1 | 223.9 | 220.7 | 230.3 | 243.2 | 273.7 | 277.4 |
| 35°   | 429.8  | 438.6  | 363.1 | 289.9 | 235.4 | 210.9 | 214.4 | 217.7 | 231.1 | 262.6 | 266.9 |
| 37.5° | 491.5  | 471.5  | 397.4 | 282.7 | 225.6 | 204.4 | 200.7 | 205.8 | 217.1 | 241.4 | 251.4 |
| 40°   | 538.5  | 539.7  | 404.8 | 273.7 | 207.0 | 195.0 | 187.1 | 192.2 | 197.0 | 216.4 | 220.7 |
| 42.5° | 626.5  | 599.6  | 423.0 | 253.9 | 195.3 | 180.9 | 176.5 | 178.7 | 179.4 | 187.6 | 194.8 |
| 45°   | 738.5  | 675.4  | 430.2 | 227.4 | 179.8 | 175.1 | 166.1 | 165.0 | 160.9 | 162.0 | 168.3 |
| 47.5° | 893.5  | 793.7  | 425.0 | 199.1 | 166.1 | 167.6 | 154.6 | 149.6 | 143.9 | 145.2 | 151.2 |
| 50°   | 1094.0 | 944.9  | 424.6 | 175.1 | 156.7 | 157.7 | 147.1 | 137.9 | 132.3 | 135.1 | 140.3 |
| 52.5° | 1318.9 | 1096.6 | 426.3 | 158.7 | 146.5 | 146.0 | 142.1 | 131.0 | 126.5 | 129.4 | 135.4 |
| 55°   | 1534.0 | 1227.0 | 439.2 | 148.3 | 135.9 | 136.7 | 138.2 | 128.8 | 123.7 | 126.5 | 132.6 |
| 57.5° | 1721.2 | 1330.0 | 434.4 | 137.3 | 126.0 | 129.9 | 133.9 | 125.7 | 121.9 | 125.8 | 132.0 |
| 60°   | 1852.1 | 1377.8 | 396.3 | 126.8 | 118.7 | 124.1 | 131.8 | 125.4 | 124.9 | 133.4 | 140.8 |
| 62.5° | 1899.9 | 1360.1 | 322.2 | 118.6 | 114.4 | 123.4 | 136.6 | 133.5 | 134.0 | 144.5 | 154.7 |
| 65°   | 1830.2 | 1267.2 | 240.3 | 113.2 | 111.0 | 127.0 | 147.7 | 138.3 | 131.5 | 140.2 | 149.6 |
| 67.5° | 1631.7 | 1102.1 | 175.6 | 108.7 | 107.2 | 132.6 | 158.0 | 137.8 | 125.2 | 134.0 | 141.7 |
| 70°   | 1320.1 | 869.9  | 136.0 | 102.9 | 102.1 | 128.8 | 158.9 | 134.1 | 118.4 | 124.1 | 128.4 |
| 72.5° | 904.5  | 595.6  | 112.6 | 97.3  | 93.4  | 114.1 | 150.9 | 125.8 | 110.3 | 113.6 | 117.2 |
| 75°   | 505.5  | 334.3  | 94.7  | 90.4  | 81.8  | 101.6 | 141.5 | 120.9 | 104.2 | 105.2 | 110.2 |
| 77.5° | 226.9  | 144.6  | 80.4  | 81.3  | 71.3  | 89.9  | 129.3 | 113.0 | 95.0  | 92.7  | 97.7  |
| 80°   | 85.8   | 70.5   | 65.2  | 68.7  | 59.9  | 77.9  | 116.6 | 105.8 | 85.2  | 82.4  | 85.2  |
| 82.5° | 49.8   | 42.7   | 48.4  | 52.9  | 47.5  | 71.6  | 111.3 | 99.3  | 75.1  | 67.9  | 70.4  |
| 85°   | 23.1   | 22.1   | 29.0  | 34.3  | 33.2  | 55.8  | 95.2  | 74.7  | 53.5  | 45.2  | 50.0  |
| 87.5° | 6.1    | 6.8    | 10.3  | 12.1  | 12.4  | 19.1  | 36.7  | 27.8  | 20.9  | 15.8  | 15.2  |
| 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)