

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: P366745

Luminaire Tested: **MSA-SA1B-727-U-T2-HSS**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P366745  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-9)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/2/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: INVUE  
Catalog Number: MSA-SA1B-727-U-T2-HSS  
Description: MESA POST TOP DECORATIVE LUMINAIRE. (1) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II OPTICS WITH HOUSE SIDE SHIELD  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3194 lumens  
Efficiency: N/A  
Efficacy: 72.6 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
IES Classification: Type II - Medium  
BUG Rating: B0 - U0 - G1

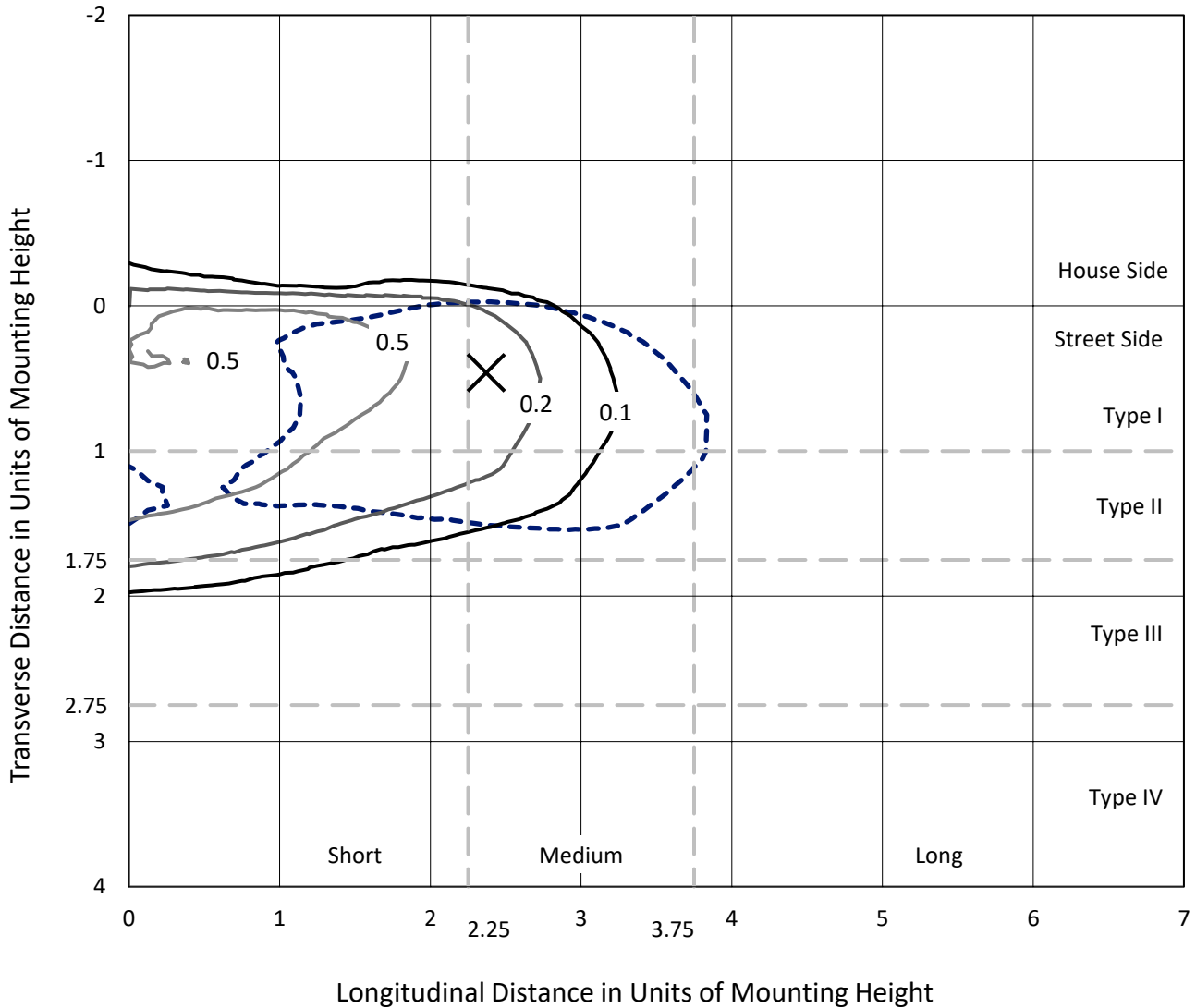
Input Watts (W): 44  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

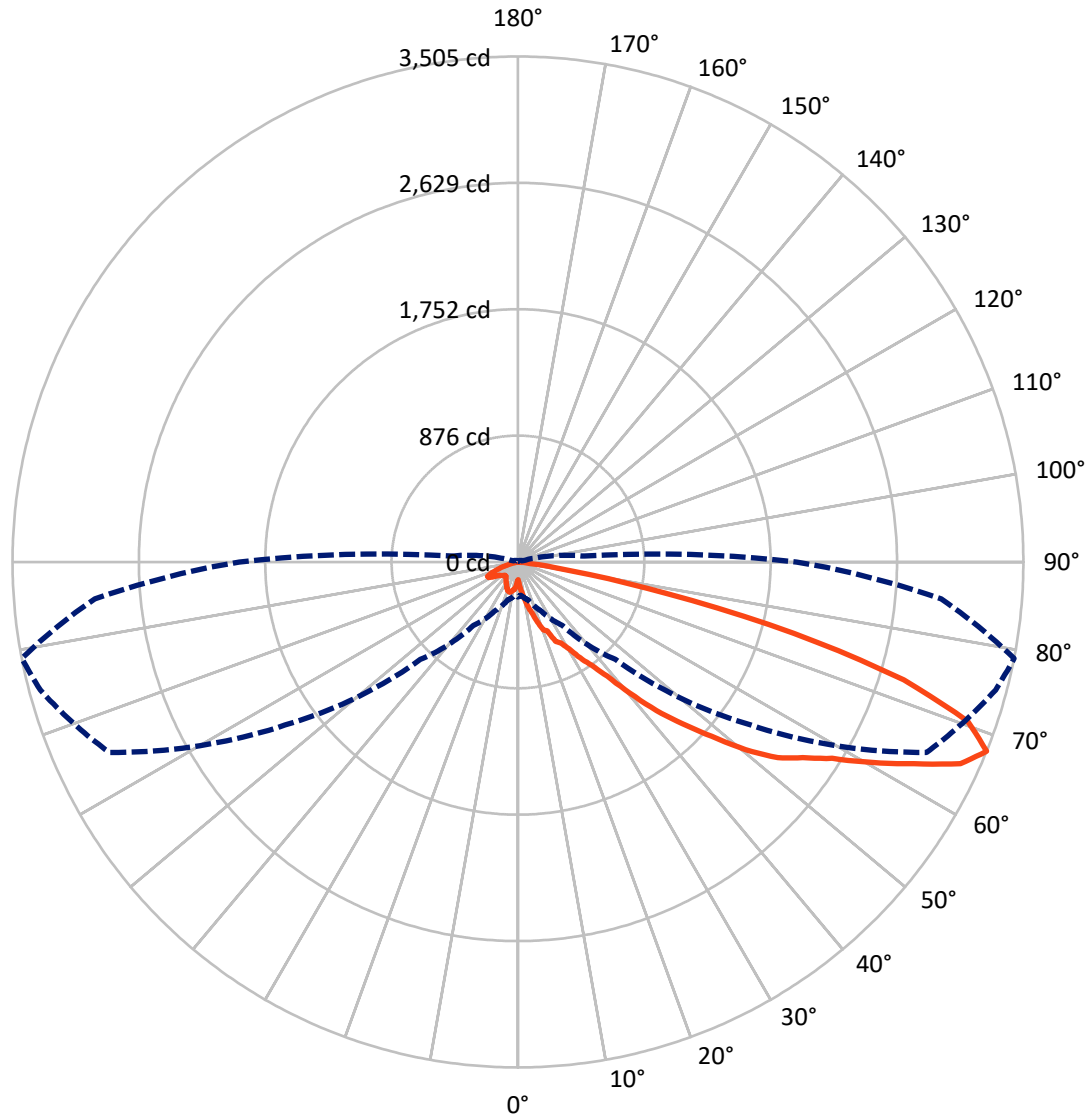
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 1 fc  
 Type II - Medium - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 79-Deg Lateral    - - - Horizontal Cone Through 67.5-Deg Vertical

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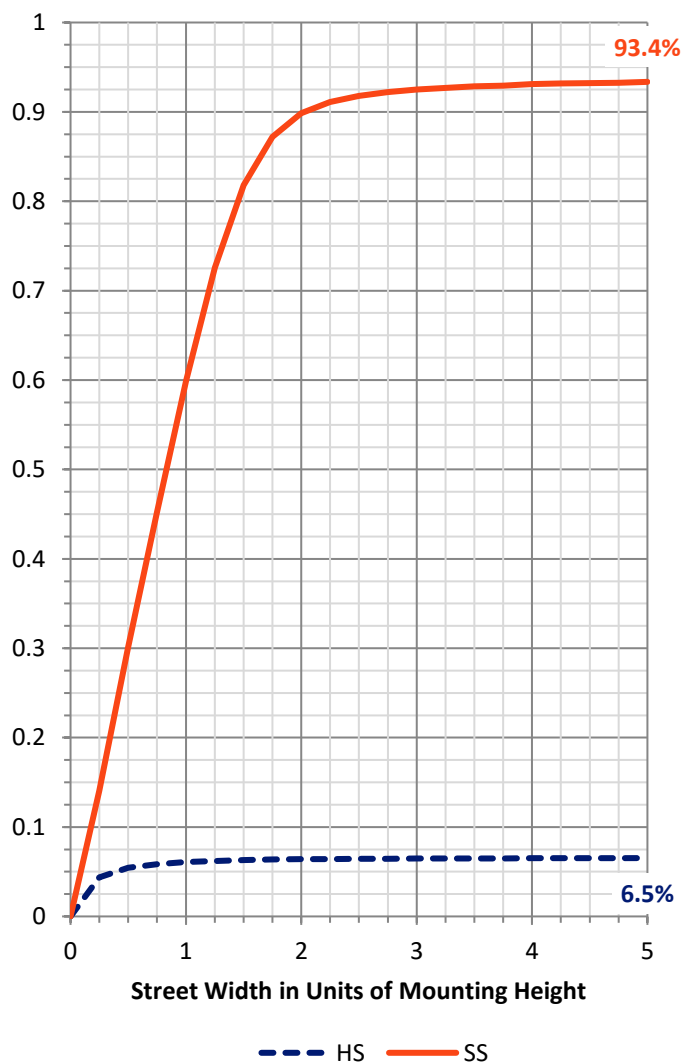
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 209.9    | 0.0    | 209.9  |
|                    | % Fixture | 6.6      | 0.0    | 6.6    |
| <b>Street Side</b> | Lumens    | 2984.1   | 0.0    | 2984.1 |
|                    | % Fixture | 93.4     | 0.0    | 93.4   |
| <b>Total</b>       | Lumens    | 3194.0   | 0.0    | 3194.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 17.9   | 0.6       |
| 10°-20°   | 71.4   | 2.2       |
| 20°-30°   | 137.7  | 4.3       |
| 30°-40°   | 270.5  | 8.5       |
| 40°-50°   | 541.8  | 17.0      |
| 50°-60°   | 866.0  | 27.1      |
| 60°-70°   | 871.3  | 27.3      |
| 70°-80°   | 393.1  | 12.3      |
| 80°-90°   | 24.3   | 0.8       |
| 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°    | 3194.0 | 100.0     |
| 0°-180°   | 3194.0 | 100.0     |

**Coefficient of Utilization**



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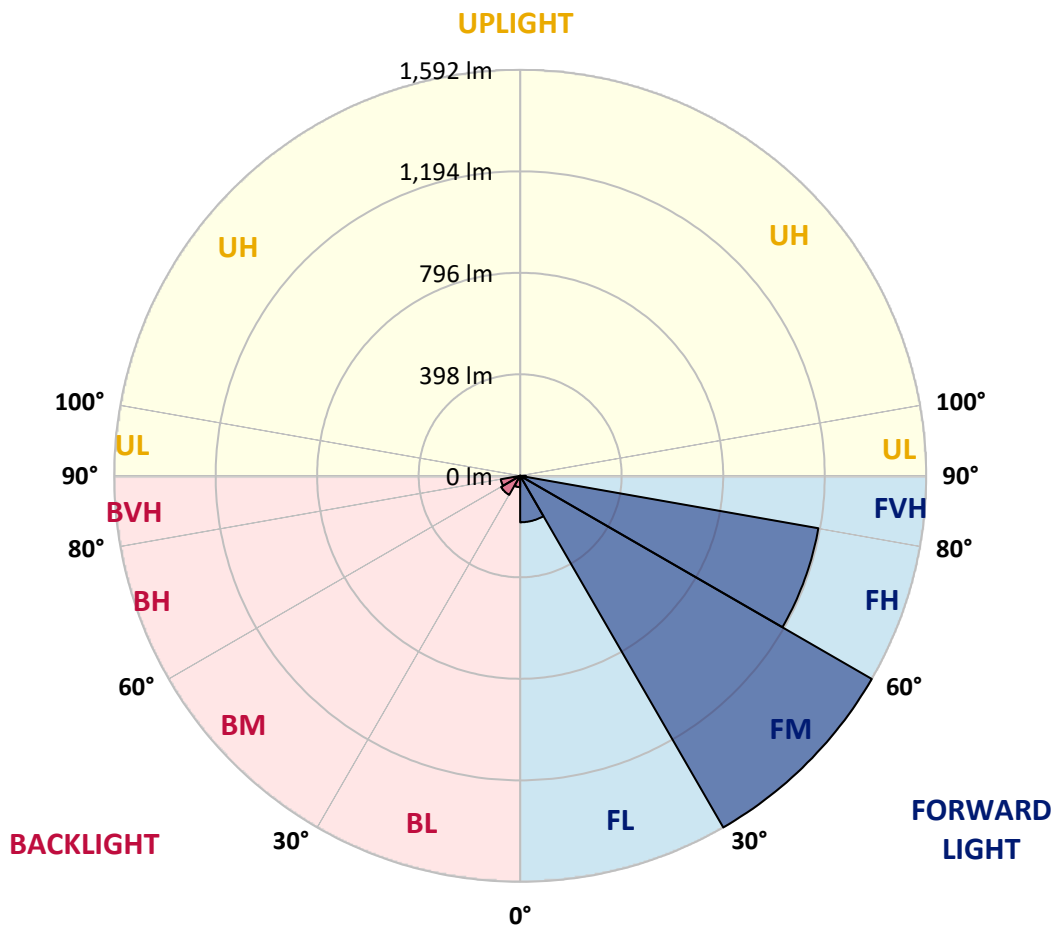
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone           | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|----------------|--------|-----------|-------------------------|------|---------|
|                |        |           | B                       | U    | G       |
| FL (0°-30°)    | 182.3  | 5.7       |                         |      |         |
| FM (30°-60°)   | 1591.9 | 49.8      |                         |      |         |
| FH (60°-80°)   | 1187.1 | 37.2      |                         |      | G1/1800 |
| FVH (80°-90°)  | 22.8   | 0.7       |                         |      | G1/100  |
| BL (0°-30°)    | 44.6   | 1.4       | B0/110                  |      |         |
| BM (30°-60°)   | 86.3   | 2.7       | B0/220                  |      |         |
| BH (60°-80°)   | 77.4   | 2.4       | B0/110                  |      | G0/110  |
| BVH (80°-90°)  | 1.5    | 0.0       |                         |      | G0/10   |
| UL (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B0-U0-G1**

Type II Medium





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 65°    | 75°    | 79°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 123.1  | 123.1  | 123.1  | 123.1  | 123.1  | 123.1  | 123.1  | 123.1  | 123.1  | 123.1  | 123.1  |
| 2.5°  | 166.2  | 160.2  | 150.5  | 156.0  | 155.6  | 158.5  | 153.2  | 147.4  | 138.0  | 147.4  | 148.1  |
| 5°    | 239.3  | 228.2  | 221.1  | 219.7  | 212.0  | 204.8  | 203.2  | 197.2  | 192.6  | 184.3  | 191.7  |
| 7.5°  | 298.1  | 293.0  | 280.5  | 279.1  | 260.1  | 249.5  | 252.8  | 250.2  | 232.8  | 224.1  | 231.4  |
| 10°   | 323.1  | 314.3  | 316.0  | 314.3  | 306.2  | 309.2  | 302.3  | 294.4  | 280.5  | 266.2  | 248.3  |
| 12.5° | 332.8  | 331.4  | 346.0  | 344.2  | 363.2  | 386.1  | 370.8  | 357.6  | 325.4  | 321.9  | 297.4  |
| 15°   | 353.5  | 362.4  | 360.2  | 367.6  | 379.8  | 418.7  | 418.3  | 421.5  | 387.4  | 369.0  | 333.7  |
| 17.5° | 372.0  | 378.6  | 368.0  | 376.4  | 409.5  | 433.1  | 464.6  | 452.3  | 456.2  | 437.5  | 382.8  |
| 20°   | 364.1  | 371.5  | 360.9  | 355.8  | 414.1  | 458.8  | 500.9  | 491.9  | 515.2  | 503.6  | 428.0  |
| 22.5° | 413.6  | 399.7  | 373.1  | 356.5  | 400.0  | 458.3  | 513.8  | 551.3  | 547.2  | 518.7  | 470.1  |
| 25°   | 474.7  | 466.2  | 434.4  | 405.1  | 409.0  | 455.1  | 554.3  | 609.4  | 621.4  | 609.2  | 510.1  |
| 27.5° | 557.1  | 555.1  | 490.0  | 477.3  | 439.6  | 441.2  | 560.6  | 682.6  | 655.3  | 636.3  | 556.7  |
| 30°   | 664.7  | 649.3  | 572.1  | 555.5  | 499.9  | 472.6  | 599.3  | 745.8  | 725.8  | 699.9  | 600.6  |
| 32.5° | 780.3  | 782.6  | 684.0  | 629.5  | 584.7  | 552.3  | 584.0  | 775.4  | 812.9  | 792.0  | 655.3  |
| 35°   | 911.7  | 921.9  | 801.3  | 737.2  | 650.2  | 602.5  | 649.9  | 866.3  | 933.5  | 878.4  | 728.8  |
| 37.5° | 1114.0 | 1113.6 | 972.8  | 845.1  | 781.9  | 730.2  | 759.6  | 948.8  | 1081.8 | 1004.3 | 860.5  |
| 40°   | 1292.0 | 1253.3 | 1122.3 | 975.6  | 877.0  | 862.9  | 841.6  | 1061.9 | 1240.1 | 1193.4 | 977.5  |
| 42.5° | 1424.9 | 1397.6 | 1239.4 | 1125.3 | 1003.1 | 958.4  | 950.8  | 1227.6 | 1473.7 | 1408.4 | 1144.6 |
| 45°   | 1583.9 | 1494.5 | 1377.9 | 1275.1 | 1150.6 | 1137.6 | 1119.8 | 1395.7 | 1745.6 | 1598.4 | 1289.9 |
| 47.5° | 1726.4 | 1642.2 | 1532.0 | 1399.9 | 1257.0 | 1364.4 | 1296.1 | 1543.4 | 1943.3 | 1805.1 | 1450.1 |
| 50°   | 1846.3 | 1756.8 | 1633.4 | 1532.9 | 1471.6 | 1544.5 | 1430.6 | 1665.1 | 2156.9 | 2044.9 | 1600.0 |
| 52.5° | 1907.4 | 1806.1 | 1710.7 | 1648.5 | 1686.0 | 1669.7 | 1613.0 | 1812.5 | 2338.9 | 2255.1 | 1732.7 |
| 55°   | 1857.2 | 1758.2 | 1718.3 | 1749.1 | 1863.0 | 1815.6 | 1820.2 | 2040.8 | 2510.8 | 2395.3 | 1848.2 |
| 57.5° | 1634.6 | 1544.3 | 1562.1 | 1646.4 | 1864.8 | 1988.7 | 2056.5 | 2262.7 | 2648.6 | 2569.9 | 2026.4 |
| 60°   | 1236.5 | 1163.8 | 1229.7 | 1379.3 | 1689.4 | 1954.2 | 2224.1 | 2484.5 | 2845.6 | 2821.0 | 2296.1 |
| 62.5° | 755.2  | 715.7  | 809.0  | 995.7  | 1346.2 | 1785.0 | 2321.8 | 2780.3 | 3056.4 | 3082.6 | 2582.2 |
| 65°   | 385.2  | 367.5  | 445.3  | 609.4  | 909.6  | 1466.3 | 2251.2 | 2964.1 | 3274.2 | 3371.0 | 2855.0 |
| 67.5° | 242.6  | 231.2  | 272.7  | 371.7  | 536.7  | 956.4  | 1971.1 | 3124.9 | 3428.1 | 3504.7 | 2946.0 |
| 70°   | 168.1  | 160.9  | 196.8  | 255.1  | 338.6  | 515.2  | 1463.5 | 2974.9 | 3306.1 | 3309.6 | 2725.7 |
| 72.5° | 106.7  | 101.1  | 136.1  | 188.9  | 249.8  | 266.0  | 839.0  | 2334.3 | 2830.0 | 2797.4 | 2207.4 |
| 75°   | 69.2   | 66.4   | 86.5   | 138.4  | 191.9  | 164.1  | 414.6  | 1575.1 | 2029.2 | 1978.1 | 1466.1 |
| 77.5° | 49.7   | 47.9   | 57.9   | 92.4   | 136.6  | 114.8  | 185.9  | 938.8  | 1163.5 | 1051.8 | 711.7  |
| 80°   | 29.9   | 29.8   | 41.9   | 57.9   | 97.2   | 81.0   | 85.9   | 426.3  | 451.1  | 367.8  | 217.4  |
| 82.5° | 15.0   | 15.5   | 23.4   | 37.3   | 62.5   | 53.0   | 39.3   | 141.9  | 121.1  | 89.3   | 44.0   |
| 85°   | 3.5    | 4.4    | 12.3   | 25.7   | 31.3   | 21.1   | 18.7   | 37.2   | 33.3   | 25.2   | 12.9   |
| 87.5° | 0.0    | 0.0    | 3.9    | 6.2    | 8.5    | 3.5    | 6.3    | 7.0    | 9.0    | 7.0    | 2.6    |
| 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°    | 123.1  | 123.1 | 123.1 | 123.1 | 123.1 | 123.1 | 123.1 | 123.1 | 123.1 | 123.1 | 123.1 |
| 2.5°  | 148.3  | 146.1 | 133.3 | 129.9 | 129.6 | 125.9 | 126.8 | 123.2 | 123.4 | 131.3 | 131.3 |
| 5°    | 188.9  | 176.6 | 164.3 | 153.4 | 146.0 | 135.4 | 131.5 | 129.9 | 128.5 | 131.7 | 133.6 |
| 7.5°  | 221.8  | 203.7 | 181.5 | 157.8 | 135.8 | 120.6 | 118.5 | 114.6 | 113.2 | 116.4 | 118.8 |
| 10°   | 236.5  | 213.9 | 183.5 | 148.8 | 128.2 | 115.9 | 105.6 | 100.2 | 99.1  | 99.0  | 99.8  |
| 12.5° | 267.5  | 239.5 | 185.6 | 145.4 | 123.1 | 109.5 | 97.9  | 88.7  | 80.3  | 81.2  | 80.3  |
| 15°   | 292.3  | 259.2 | 185.6 | 137.3 | 110.7 | 97.2  | 76.8  | 72.2  | 71.0  | 72.9  | 71.3  |
| 17.5° | 329.8  | 278.7 | 176.2 | 122.9 | 100.2 | 75.5  | 67.8  | 67.4  | 69.9  | 72.7  | 71.0  |
| 20°   | 352.3  | 281.4 | 160.6 | 106.3 | 82.2  | 65.5  | 62.7  | 59.9  | 63.4  | 65.7  | 64.8  |
| 22.5° | 375.7  | 281.5 | 144.9 | 97.5  | 66.2  | 59.7  | 55.1  | 52.8  | 53.3  | 55.5  | 55.8  |
| 25°   | 385.8  | 274.7 | 130.3 | 85.9  | 60.0  | 53.3  | 48.6  | 46.1  | 45.3  | 46.3  | 46.0  |
| 27.5° | 413.1  | 261.5 | 114.4 | 73.2  | 57.0  | 47.4  | 43.0  | 40.0  | 37.3  | 39.1  | 39.4  |
| 30°   | 416.9  | 257.2 | 105.8 | 65.1  | 53.2  | 41.9  | 38.0  | 34.9  | 32.9  | 35.4  | 35.4  |
| 32.5° | 429.3  | 234.0 | 101.4 | 61.8  | 49.1  | 38.7  | 33.5  | 31.2  | 30.8  | 32.4  | 32.6  |
| 35°   | 448.3  | 223.8 | 94.9  | 59.2  | 45.4  | 35.0  | 30.1  | 29.1  | 28.7  | 29.9  | 29.9  |
| 37.5° | 512.7  | 211.1 | 87.7  | 56.9  | 42.3  | 33.1  | 29.2  | 27.5  | 27.6  | 28.7  | 29.4  |
| 40°   | 555.5  | 212.7 | 76.9  | 54.1  | 38.6  | 31.3  | 27.5  | 26.2  | 26.1  | 26.6  | 27.1  |
| 42.5° | 634.9  | 213.9 | 72.2  | 51.1  | 35.7  | 29.2  | 25.7  | 24.8  | 24.1  | 24.6  | 25.2  |
| 45°   | 723.6  | 220.4 | 69.7  | 48.6  | 34.2  | 28.0  | 24.1  | 23.6  | 22.0  | 22.4  | 23.1  |
| 47.5° | 809.2  | 244.2 | 66.7  | 45.1  | 32.7  | 27.3  | 22.5  | 21.3  | 20.2  | 20.1  | 20.8  |
| 50°   | 906.4  | 267.3 | 63.4  | 41.2  | 31.3  | 26.2  | 21.0  | 19.0  | 18.3  | 18.3  | 18.8  |
| 52.5° | 993.4  | 289.3 | 60.2  | 38.6  | 30.3  | 24.3  | 19.5  | 17.6  | 17.1  | 17.1  | 17.8  |
| 55°   | 1084.9 | 312.3 | 57.4  | 36.1  | 28.9  | 22.4  | 18.3  | 16.6  | 16.4  | 16.0  | 16.6  |
| 57.5° | 1246.6 | 362.7 | 53.9  | 34.0  | 26.9  | 20.8  | 17.3  | 15.5  | 15.1  | 14.6  | 15.1  |
| 60°   | 1482.0 | 440.0 | 49.3  | 31.9  | 24.6  | 19.7  | 16.4  | 14.3  | 13.7  | 12.9  | 13.0  |
| 62.5° | 1712.1 | 502.5 | 44.0  | 29.2  | 22.5  | 18.7  | 15.0  | 12.9  | 12.0  | 10.9  | 11.1  |
| 65°   | 1909.3 | 527.2 | 38.4  | 26.1  | 20.4  | 16.2  | 13.0  | 11.3  | 10.0  | 8.6   | 8.5   |
| 67.5° | 1932.5 | 465.5 | 32.9  | 23.1  | 18.3  | 13.7  | 11.1  | 10.0  | 8.1   | 6.9   | 6.5   |
| 70°   | 1739.2 | 346.9 | 27.5  | 20.4  | 15.8  | 11.6  | 9.5   | 8.8   | 7.6   | 6.5   | 6.0   |
| 72.5° | 1385.0 | 256.0 | 23.1  | 18.1  | 13.9  | 9.9   | 8.1   | 8.3   | 7.6   | 6.3   | 5.6   |
| 75°   | 915.9  | 146.5 | 18.8  | 15.1  | 11.6  | 7.9   | 7.4   | 7.4   | 7.2   | 6.0   | 5.3   |
| 77.5° | 440.7  | 63.2  | 14.4  | 12.0  | 9.3   | 6.0   | 6.7   | 6.7   | 6.9   | 5.5   | 4.4   |
| 80°   | 125.0  | 19.0  | 9.0   | 8.1   | 6.9   | 4.0   | 5.3   | 5.1   | 4.6   | 3.2   | 1.9   |
| 82.5° | 22.4   | 7.4   | 4.0   | 4.2   | 3.9   | 1.6   | 3.0   | 2.8   | 2.3   | 1.2   | 0.2   |
| 85°   | 6.2    | 2.8   | 2.3   | 2.5   | 1.9   | 0.5   | 1.2   | 1.6   | 1.2   | 0.7   | 0.0   |
| 87.5° | 1.6    | 1.2   | 1.6   | 1.8   | 1.4   | 0.2   | 0.5   | 0.2   | 0.5   | 0.2   | 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)