

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: P367662

Luminaire Tested: **MSA-SA3A-727-U-SL3**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P367662  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-18)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/2/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: INVUE  
Catalog Number: MSA-SA3A-727-U-SL3  
Description: MESA POST TOP DECORATIVE LUMINAIRE. (3) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III SPILL LIGHT ELIMINATOR OPTICS.  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 9626 lumens  
Efficiency: N/A  
Efficacy: 100.3 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type III - Short  
BUG Rating: B1 - U0 - G2

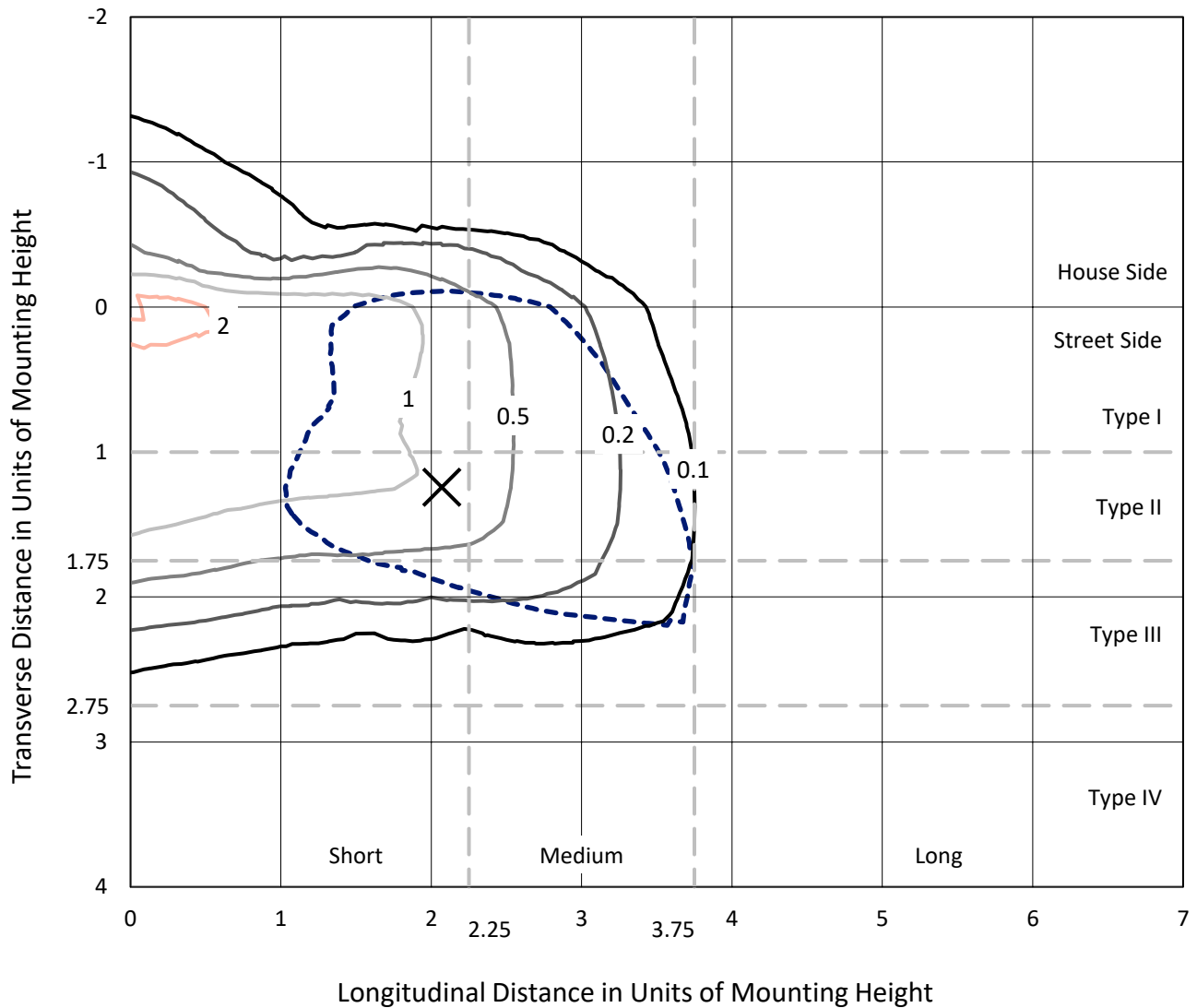
Input Watts (W): 96  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

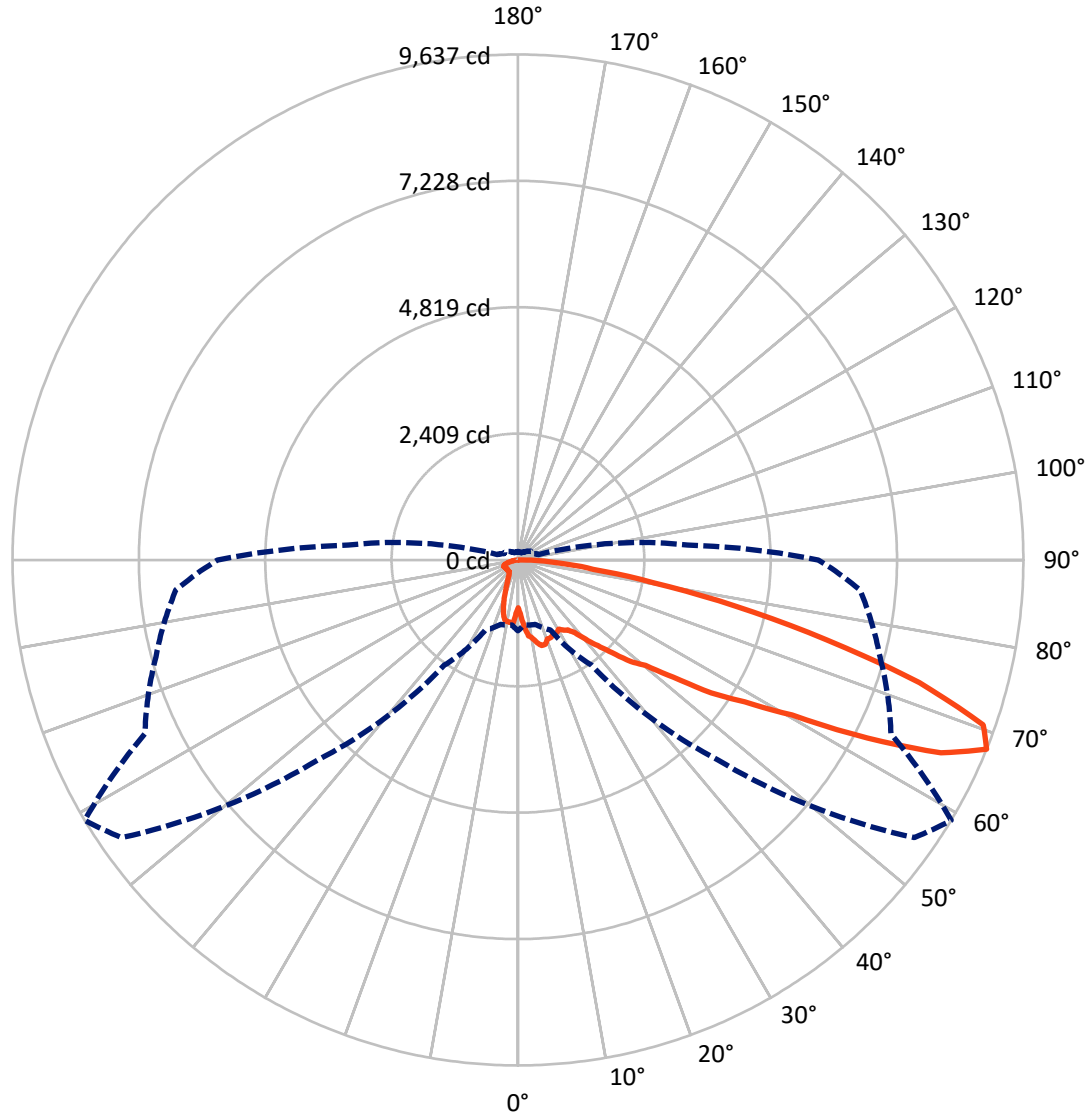
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 2.5 fc  
 Type III - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 59-Deg Lateral      - - - Horizontal Cone Through 67.5-Deg Vertical

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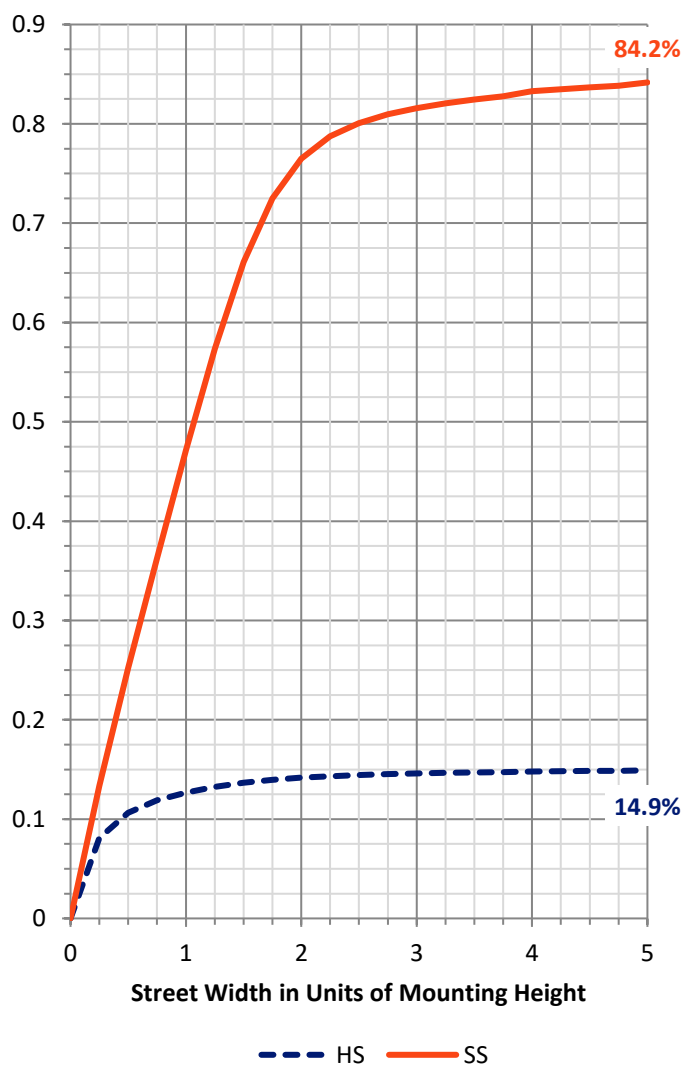
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 1448.9   | 0.0    | 1448.9 |
|                    | % Fixture | 15.1     | 0.0    | 15.1   |
| <b>Street Side</b> | Lumens    | 8177.1   | 0.0    | 8177.1 |
|                    | % Fixture | 84.9     | 0.0    | 84.9   |
| <b>Total</b>       | Lumens    | 9626.0   | 0.0    | 9626.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 119.0  | 1.2       |
| 10°-20°   | 352.0  | 3.7       |
| 20°-30°   | 502.7  | 5.2       |
| 30°-40°   | 740.8  | 7.7       |
| 40°-50°   | 1251.6 | 13.0      |
| 50°-60°   | 2178.1 | 22.6      |
| 60°-70°   | 2775.6 | 28.8      |
| 70°-80°   | 1469.7 | 15.3      |
| 80°-90°   | 236.4  | 2.5       |
| 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°    | 9626.0 | 100.0     |
| 0°-180°   | 9626.0 | 100.0     |

**Coefficient of Utilization**



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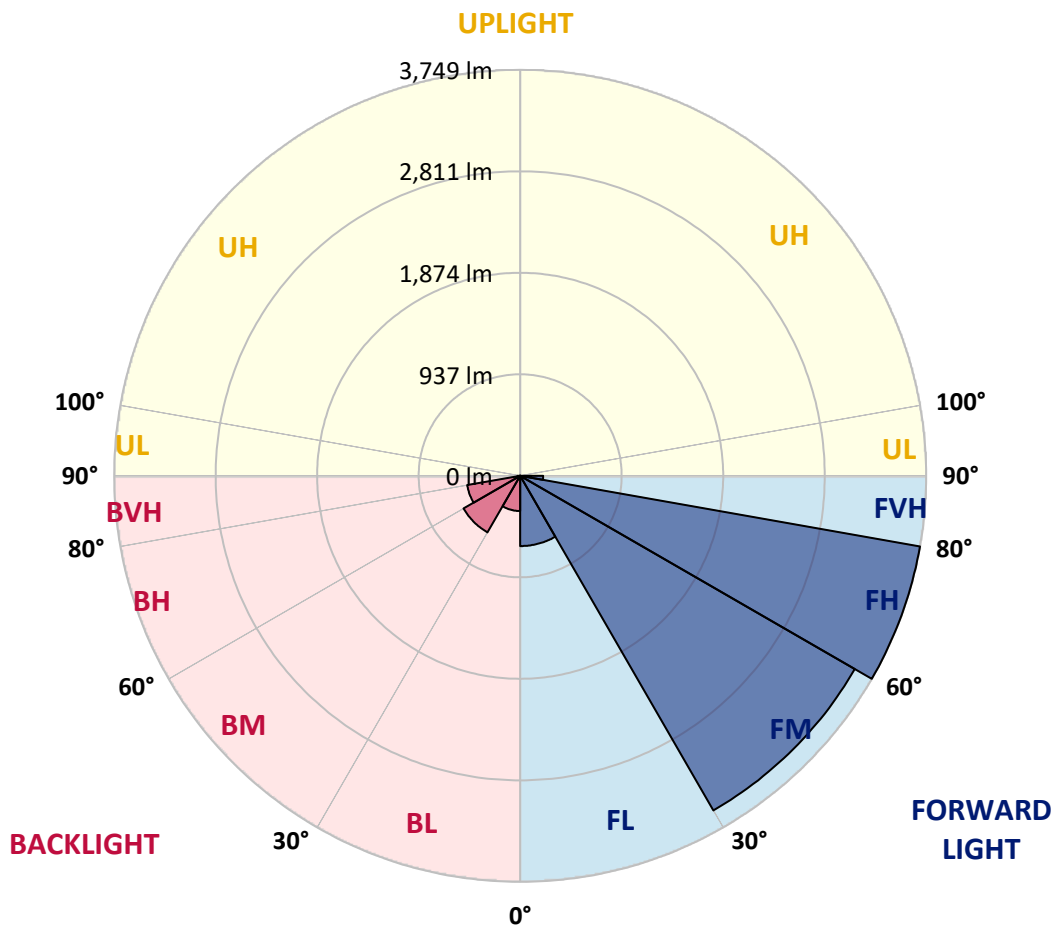
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone           | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|----------------|--------|-----------|-------------------------|------|---------|
|                |        |           | B                       | U    | G       |
| FL (0°-30°)    | 648.8  | 6.7       |                         |      |         |
| FM (30°-60°)   | 3567.3 | 37.1      |                         |      |         |
| FH (60°-80°)   | 3748.7 | 38.9      |                         |      | G2/5000 |
| FVH (80°-90°)  | 212.4  | 2.2       |                         |      | G2/225  |
| BL (0°-30°)    | 324.9  | 3.4       | B1/500                  |      |         |
| BM (30°-60°)   | 603.3  | 6.3       | B1/1000                 |      |         |
| BH (60°-80°)   | 496.6  | 5.2       | B1/500                  |      | G1/500  |
| BVH (80°-90°)  | 24.1   | 0.3       |                         |      | G1/100  |
| 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





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 59°    | 65°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 910.9  | 910.9  | 910.9  | 910.9  | 910.9  | 910.9  | 910.9  | 910.9  | 910.9  | 910.9  | 910.9  |
| 2.5°  | 1137.3 | 1084.2 | 1027.9 | 1043.9 | 1076.1 | 1090.8 | 1074.9 | 1059.4 | 1039.4 | 1015.7 | 1096.5 |
| 5°    | 1379.2 | 1300.4 | 1289.0 | 1288.6 | 1277.2 | 1231.5 | 1290.2 | 1286.2 | 1309.8 | 1334.3 | 1397.1 |
| 7.5°  | 1448.1 | 1418.7 | 1386.9 | 1402.0 | 1344.5 | 1342.0 | 1433.4 | 1459.5 | 1505.2 | 1490.1 | 1574.6 |
| 10°   | 1412.6 | 1379.6 | 1396.3 | 1390.2 | 1395.5 | 1455.8 | 1511.7 | 1513.4 | 1562.3 | 1610.4 | 1556.2 |
| 12.5° | 1350.2 | 1352.6 | 1419.1 | 1416.7 | 1502.3 | 1614.5 | 1631.3 | 1618.2 | 1698.1 | 1665.5 | 1712.0 |
| 15°   | 1394.7 | 1424.4 | 1407.7 | 1422.0 | 1455.8 | 1598.6 | 1645.1 | 1692.4 | 1768.3 | 1797.7 | 1751.2 |
| 17.5° | 1465.6 | 1481.5 | 1406.5 | 1398.7 | 1468.5 | 1536.2 | 1651.6 | 1692.0 | 1703.9 | 1913.1 | 1847.4 |
| 20°   | 1435.5 | 1467.7 | 1394.3 | 1300.0 | 1415.9 | 1505.6 | 1619.4 | 1607.2 | 1664.7 | 1922.1 | 1867.4 |
| 22.5° | 1521.1 | 1467.7 | 1374.3 | 1307.4 | 1348.2 | 1430.6 | 1527.2 | 1607.6 | 1675.7 | 1869.5 | 1896.4 |
| 25°   | 1537.4 | 1512.1 | 1424.8 | 1358.4 | 1344.5 | 1373.9 | 1511.7 | 1564.4 | 1679.4 | 1941.3 | 1880.9 |
| 27.5° | 1637.0 | 1599.0 | 1421.2 | 1423.2 | 1354.3 | 1302.5 | 1462.8 | 1573.3 | 1721.0 | 1896.8 | 1918.8 |
| 30°   | 1760.6 | 1731.6 | 1508.5 | 1516.6 | 1421.2 | 1325.7 | 1496.2 | 1529.7 | 1745.1 | 1966.1 | 1966.6 |
| 32.5° | 1853.2 | 1904.1 | 1680.2 | 1569.2 | 1535.4 | 1464.0 | 1444.8 | 1595.4 | 1716.9 | 2091.8 | 2048.1 |
| 35°   | 2020.0 | 2059.6 | 1812.4 | 1723.4 | 1608.8 | 1528.5 | 1584.3 | 1638.6 | 1834.0 | 2257.0 | 2169.3 |
| 37.5° | 2328.8 | 2283.1 | 2057.9 | 1918.0 | 1875.2 | 1759.3 | 1790.3 | 1752.4 | 1961.3 | 2442.6 | 2406.7 |
| 40°   | 2507.5 | 2467.9 | 2230.9 | 2153.4 | 1983.7 | 1998.4 | 1959.6 | 1987.4 | 2131.4 | 2640.0 | 2628.6 |
| 42.5° | 2683.7 | 2630.6 | 2430.4 | 2376.5 | 2207.2 | 2135.4 | 2142.4 | 2232.1 | 2393.6 | 2959.0 | 2921.1 |
| 45°   | 2857.8 | 2722.0 | 2634.3 | 2648.6 | 2567.0 | 2419.7 | 2429.9 | 2514.4 | 2680.0 | 3323.7 | 3236.4 |
| 47.5° | 2991.2 | 2879.1 | 2810.5 | 2793.0 | 2752.6 | 2949.6 | 2861.5 | 2895.8 | 2968.8 | 3648.4 | 3615.3 |
| 50°   | 3243.7 | 3112.8 | 3023.5 | 2998.2 | 3135.2 | 3409.4 | 3229.9 | 3156.0 | 3311.5 | 4068.1 | 4051.0 |
| 52.5° | 3648.0 | 3484.8 | 3335.9 | 3334.3 | 3532.5 | 3710.4 | 3836.8 | 3709.6 | 3766.7 | 4498.1 | 4547.0 |
| 55°   | 4000.8 | 3812.0 | 3678.2 | 3752.0 | 4034.3 | 4143.2 | 4572.7 | 4473.2 | 4425.1 | 4932.1 | 5072.0 |
| 57.5° | 4132.6 | 3911.9 | 3824.6 | 3933.5 | 4349.6 | 4909.3 | 5363.3 | 5101.4 | 5054.5 | 5423.2 | 5716.5 |
| 60°   | 3843.4 | 3610.0 | 3615.3 | 3820.5 | 4541.3 | 5471.8 | 6227.6 | 6005.3 | 5730.4 | 6034.7 | 6321.0 |
| 62.5° | 3019.4 | 2808.5 | 2946.0 | 3258.0 | 4380.6 | 6018.4 | 7386.1 | 7479.9 | 6502.6 | 6541.7 | 6656.4 |
| 65°   | 2052.2 | 1906.2 | 2030.2 | 2335.7 | 3552.9 | 6316.6 | 8489.5 | 8865.6 | 7205.8 | 6873.8 | 6801.2 |
| 67.5° | 1350.6 | 1247.4 | 1271.5 | 1474.6 | 2445.9 | 5384.9 | 9227.4 | 9637.4 | 7848.7 | 7146.3 | 6545.8 |
| 70°   | 1045.9 | 962.7  | 952.1  | 1058.5 | 1450.5 | 3741.0 | 8790.2 | 9413.4 | 8240.3 | 6890.9 | 5705.5 |
| 72.5° | 820.7  | 757.5  | 763.2  | 865.6  | 1123.4 | 2075.5 | 6802.0 | 8004.9 | 7650.4 | 5942.9 | 4383.5 |
| 75°   | 640.0  | 588.2  | 617.2  | 734.2  | 1039.0 | 1289.8 | 4693.1 | 6075.5 | 5914.8 | 4400.6 | 2500.1 |
| 77.5° | 464.6  | 431.2  | 472.4  | 625.3  | 976.5  | 1106.7 | 2921.5 | 4238.6 | 3789.1 | 2259.4 | 857.8  |
| 80°   | 304.7  | 285.9  | 319.8  | 509.9  | 885.6  | 1065.1 | 1805.4 | 2597.2 | 1872.3 | 634.7  | 324.7  |
| 82.5° | 179.5  | 171.3  | 199.5  | 345.1  | 711.8  | 998.2  | 1204.2 | 1443.2 | 766.1  | 268.4  | 172.5  |
| 85°   | 94.2   | 88.1   | 118.3  | 198.2  | 490.7  | 911.3  | 948.0  | 864.0  | 370.0  | 116.7  | 82.4   |
| 87.5° | 31.4   | 30.6   | 50.2   | 76.7   | 185.6  | 483.8  | 505.8  | 410.4  | 152.6  | 33.9   | 17.9   |
| 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°    | 910.9  | 910.9  | 910.9  | 910.9  | 910.9  | 910.9  | 910.9  | 910.9  | 910.9  | 910.9  | 910.9  |
| 2.5°  | 1107.5 | 1091.2 | 997.4  | 1010.4 | 1022.6 | 1016.5 | 1012.9 | 970.4  | 966.3  | 1026.7 | 1021.8 |
| 5°    | 1395.5 | 1327.8 | 1247.8 | 1244.1 | 1191.5 | 1137.7 | 1148.3 | 1131.1 | 1136.0 | 1160.9 | 1163.4 |
| 7.5°  | 1547.6 | 1463.2 | 1386.9 | 1262.9 | 1157.7 | 1072.4 | 1085.9 | 1081.8 | 1070.8 | 1127.1 | 1142.2 |
| 10°   | 1544.8 | 1469.7 | 1383.6 | 1233.5 | 1162.6 | 1093.2 | 1010.0 | 931.3  | 908.0  | 880.3  | 882.7  |
| 12.5° | 1646.8 | 1580.3 | 1392.6 | 1239.7 | 1143.4 | 1023.9 | 868.0  | 782.0  | 699.6  | 697.9  | 677.1  |
| 15°   | 1678.6 | 1629.6 | 1411.8 | 1204.6 | 1009.2 | 837.9  | 676.7  | 583.3  | 523.8  | 511.9  | 494.4  |
| 17.5° | 1758.9 | 1682.2 | 1353.5 | 1091.2 | 853.4  | 655.1  | 508.7  | 443.4  | 438.5  | 446.7  | 437.7  |
| 20°   | 1764.2 | 1639.8 | 1248.2 | 923.5  | 685.7  | 496.4  | 414.8  | 382.2  | 399.8  | 419.7  | 418.9  |
| 22.5° | 1759.7 | 1586.4 | 1157.3 | 780.7  | 515.2  | 398.9  | 363.5  | 356.1  | 372.4  | 402.2  | 405.9  |
| 25°   | 1714.1 | 1568.8 | 1043.4 | 641.2  | 418.1  | 341.8  | 332.0  | 336.5  | 356.9  | 392.0  | 392.0  |
| 27.5° | 1761.8 | 1497.5 | 900.7  | 521.7  | 351.6  | 304.3  | 311.2  | 322.7  | 337.8  | 377.7  | 385.1  |
| 30°   | 1746.3 | 1521.1 | 785.6  | 420.2  | 310.0  | 278.2  | 293.7  | 305.1  | 322.3  | 363.9  | 367.5  |
| 32.5° | 1787.9 | 1457.9 | 689.0  | 353.3  | 282.7  | 268.0  | 271.7  | 287.2  | 309.6  | 342.2  | 348.8  |
| 35°   | 1851.5 | 1481.1 | 578.0  | 317.8  | 269.2  | 256.2  | 263.1  | 275.3  | 297.8  | 329.6  | 334.9  |
| 37.5° | 2054.7 | 1479.9 | 501.3  | 298.2  | 266.8  | 253.7  | 257.0  | 265.6  | 291.7  | 320.6  | 332.9  |
| 40°   | 2185.2 | 1564.8 | 431.6  | 293.7  | 263.9  | 252.5  | 249.6  | 259.0  | 279.8  | 314.1  | 322.7  |
| 42.5° | 2430.4 | 1616.6 | 401.4  | 292.1  | 263.5  | 245.6  | 242.7  | 253.7  | 274.1  | 305.9  | 319.0  |
| 45°   | 2689.4 | 1690.4 | 377.3  | 291.3  | 262.3  | 244.3  | 235.8  | 249.6  | 266.8  | 297.4  | 312.5  |
| 47.5° | 2994.1 | 1846.6 | 363.9  | 288.4  | 259.8  | 246.0  | 233.3  | 240.3  | 259.4  | 290.0  | 305.1  |
| 50°   | 3393.0 | 2053.4 | 366.7  | 284.3  | 263.5  | 246.4  | 229.7  | 232.9  | 250.5  | 280.2  | 295.7  |
| 52.5° | 3878.0 | 2373.7 | 385.1  | 285.9  | 266.0  | 244.3  | 228.0  | 226.4  | 241.5  | 267.6  | 283.1  |
| 55°   | 4462.6 | 2828.1 | 440.1  | 293.7  | 266.0  | 243.9  | 225.6  | 218.2  | 229.7  | 250.9  | 266.0  |
| 57.5° | 5167.9 | 3354.3 | 547.8  | 297.4  | 263.9  | 241.5  | 220.3  | 207.2  | 214.2  | 231.7  | 246.0  |
| 60°   | 5773.6 | 3778.9 | 658.8  | 299.8  | 268.0  | 235.8  | 209.7  | 193.4  | 197.8  | 211.3  | 223.9  |
| 62.5° | 6082.4 | 3898.0 | 692.2  | 297.8  | 279.0  | 232.1  | 197.0  | 178.7  | 179.1  | 190.5  | 201.9  |
| 65°   | 6140.3 | 3739.4 | 558.0  | 295.7  | 293.3  | 231.7  | 188.0  | 166.0  | 163.2  | 171.3  | 181.1  |
| 67.5° | 5727.5 | 3245.8 | 402.6  | 291.3  | 294.9  | 229.2  | 181.9  | 155.8  | 148.5  | 154.2  | 162.4  |
| 70°   | 4863.2 | 2613.9 | 338.2  | 282.3  | 275.3  | 217.0  | 171.3  | 145.2  | 135.4  | 139.5  | 145.6  |
| 72.5° | 3625.5 | 1933.9 | 294.9  | 263.1  | 239.9  | 185.6  | 155.0  | 133.4  | 123.2  | 126.0  | 130.5  |
| 75°   | 2014.3 | 1031.6 | 246.8  | 228.8  | 195.8  | 150.1  | 132.2  | 118.3  | 109.3  | 110.5  | 115.4  |
| 77.5° | 669.0  | 380.6  | 181.1  | 181.5  | 148.1  | 115.8  | 108.9  | 101.2  | 94.2   | 94.6   | 98.7   |
| 80°   | 303.1  | 210.5  | 129.7  | 130.5  | 103.2  | 84.0   | 83.6   | 81.2   | 76.7   | 75.5   | 78.3   |
| 82.5° | 175.8  | 127.7  | 88.9   | 84.8   | 66.5   | 54.7   | 60.8   | 59.6   | 58.3   | 53.8   | 54.7   |
| 85°   | 86.5   | 68.5   | 46.5   | 44.1   | 36.7   | 27.3   | 32.6   | 33.9   | 32.6   | 27.7   | 27.3   |
| 87.5° | 21.2   | 22.4   | 11.4   | 10.6   | 6.1    | 2.9    | 4.9    | 4.9    | 6.1    | 4.1    | 2.0    |
| 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)