

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: P367070

Luminaire Tested: **MSA-SA1D-750-U-SL4**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P367070  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-20)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/2/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: INVUE  
Catalog Number: MSA-SA1D-750-U-SL4  
Description: MESA POST TOP DECORATIVE LUMINAIRE. (1) 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: 6680 lumens  
Efficiency: N/A  
Efficacy: 99.7 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B1 - U0 - G2

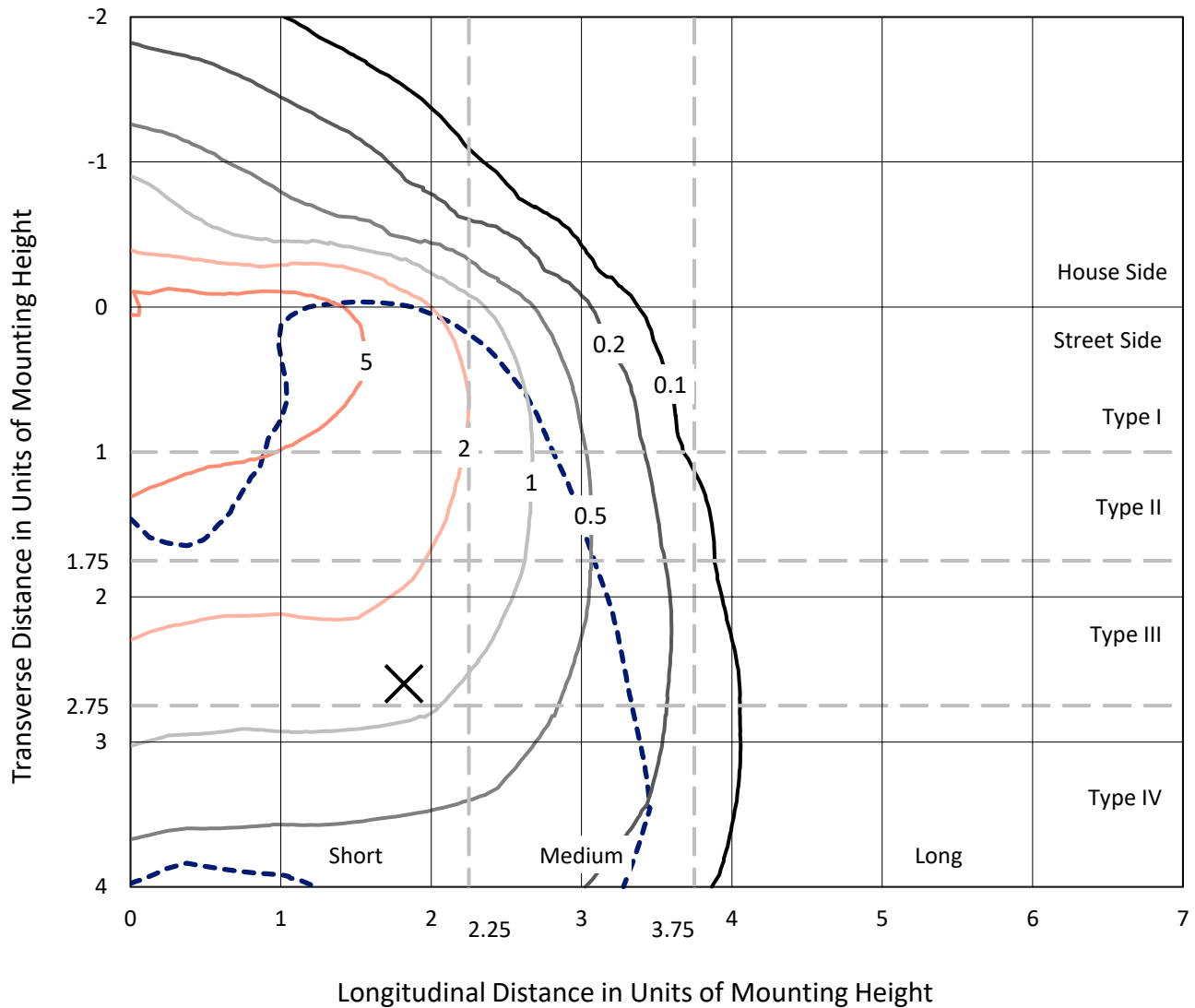
Input Watts (W): 67  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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## Iso-Footcandle Lines of Horizontal Illumination

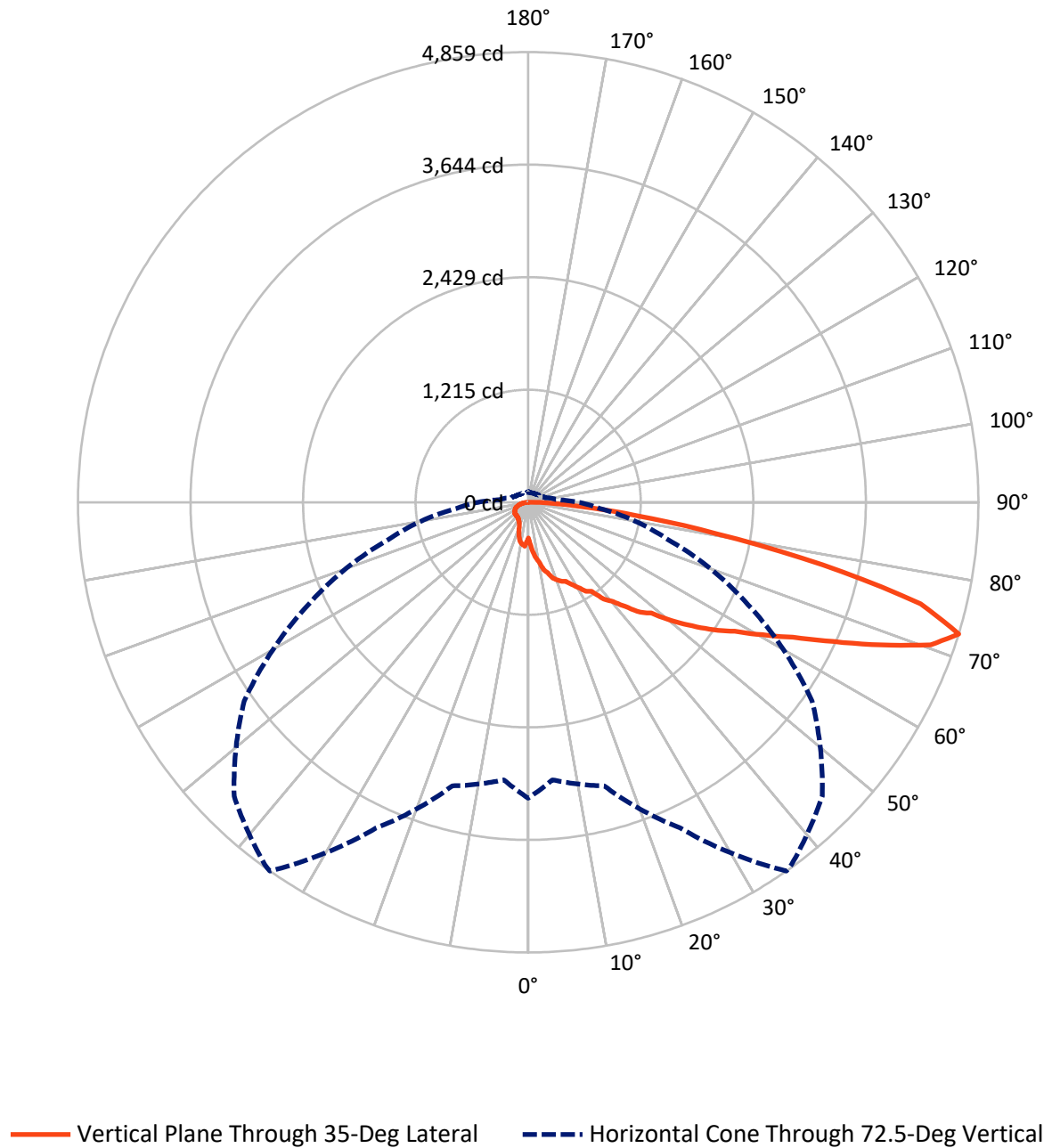
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 8.4 fc  
 Type IV - Short - N/A

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## Luminous Intensity Polar Plot



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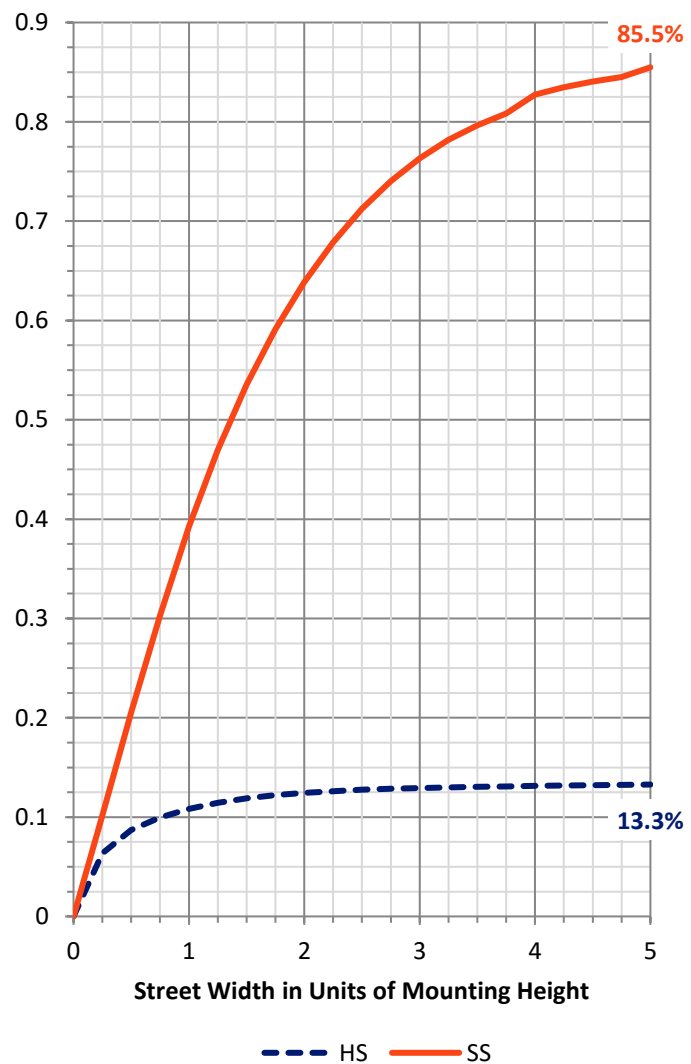
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 896.4    | 0.0    | 896.4  |
|                    | % Fixture | 13.4     | 0.0    | 13.4   |
| <b>Street Side</b> | Lumens    | 5783.6   | 0.0    | 5783.6 |
|                    | % Fixture | 86.6     | 0.0    | 86.6   |
| <b>Total</b>       | Lumens    | 6680.0   | 0.0    | 6680.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 51.3   | 0.8       |
| 10°-20°   | 180.7  | 2.7       |
| 20°-30°   | 314.0  | 4.7       |
| 30°-40°   | 524.8  | 7.9       |
| 40°-50°   | 910.9  | 13.6      |
| 50°-60°   | 1377.1 | 20.6      |
| 60°-70°   | 1784.0 | 26.7      |
| 70°-80°   | 1316.4 | 19.7      |
| 80°-90°   | 220.6  | 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°    | 6680.0 | 100.0     |
| 0°-180°   | 6680.0 | 100.0     |

**Coefficient of Utilization**



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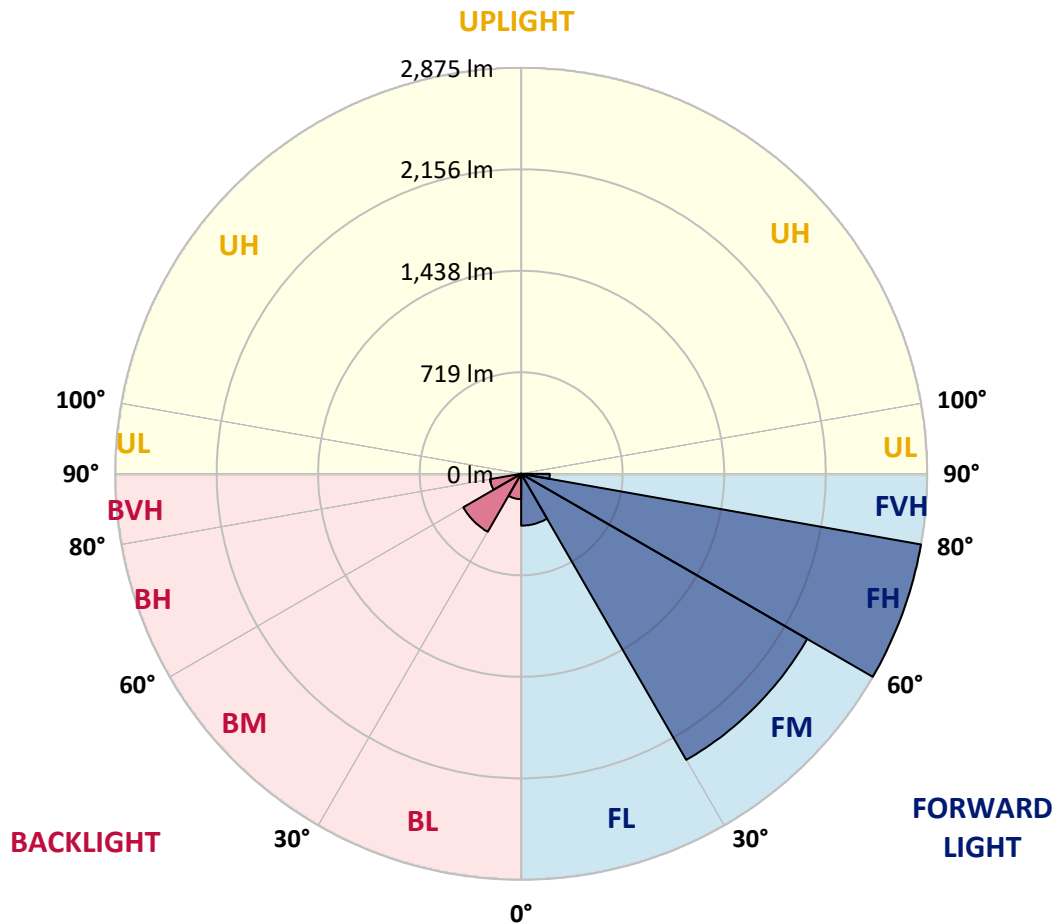
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 366.9  | 5.5       |                         |      |         |
| FM   | (30°-60°)   | 2339.1 | 35.0      |                         |      |         |
| FH   | (60°-80°)   | 2875.0 | 43.0      |                         |      | G2/5000 |
| FVH  | (80°-90°)   | 202.6  | 3.0       |                         |      | G2/225  |
| BL   | (0°-30°)    | 179.2  | 2.7       | B1/500                  |      |         |
| BM   | (30°-60°)   | 473.8  | 7.1       | B1/1000                 |      |         |
| BH   | (60°-80°)   | 225.4  | 3.4       | B1/500                  |      | G1/500  |
| BVH  | (80°-90°)   | 18.1   | 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 IV Short



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 36°    | 45°    | 55°    | 65°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 386.0  | 386.0  | 386.0  | 386.0  | 386.0  | 386.0  | 386.0  | 386.0  | 386.0  | 386.0  | 386.0  |
| 2.5°  | 481.6  | 458.5  | 438.5  | 437.6  | 456.2  | 463.3  | 460.5  | 454.2  | 446.8  | 431.1  | 465.3  |
| 5°    | 603.3  | 570.2  | 563.9  | 556.5  | 539.7  | 544.3  | 516.9  | 537.7  | 544.3  | 559.4  | 582.2  |
| 7.5°  | 675.1  | 655.8  | 640.6  | 634.4  | 605.3  | 601.9  | 581.6  | 611.3  | 623.8  | 621.8  | 655.8  |
| 10°   | 703.4  | 685.7  | 686.8  | 666.3  | 656.9  | 660.9  | 663.2  | 663.7  | 671.4  | 677.7  | 660.6  |
| 12.5° | 717.9  | 724.8  | 749.8  | 735.9  | 747.8  | 752.7  | 776.6  | 752.1  | 753.0  | 720.8  | 738.4  |
| 15°   | 791.2  | 808.3  | 793.7  | 793.2  | 789.5  | 797.5  | 818.0  | 801.4  | 814.3  | 804.0  | 781.2  |
| 17.5° | 879.6  | 884.7  | 856.8  | 845.4  | 860.2  | 857.6  | 852.5  | 855.0  | 823.1  | 882.4  | 854.5  |
| 20°   | 906.7  | 926.9  | 890.1  | 845.4  | 894.4  | 901.0  | 899.8  | 888.7  | 833.9  | 919.5  | 892.4  |
| 22.5° | 985.3  | 958.0  | 928.9  | 900.4  | 925.5  | 929.2  | 922.9  | 896.4  | 878.1  | 910.6  | 932.0  |
| 25°   | 1021.0 | 1014.4 | 977.4  | 973.9  | 946.3  | 933.2  | 944.0  | 936.3  | 918.3  | 976.2  | 952.6  |
| 27.5° | 1102.5 | 1094.8 | 1009.6 | 1044.6 | 1004.4 | 1001.0 | 943.7  | 969.4  | 987.3  | 983.1  | 1018.4 |
| 30°   | 1194.9 | 1203.7 | 1079.1 | 1114.2 | 1067.7 | 1061.5 | 1003.9 | 1036.4 | 1048.6 | 1052.6 | 1096.8 |
| 32.5° | 1297.5 | 1321.8 | 1198.0 | 1169.2 | 1144.4 | 1148.7 | 1100.0 | 1040.7 | 1088.3 | 1181.5 | 1200.6 |
| 35°   | 1408.7 | 1418.7 | 1289.0 | 1245.6 | 1180.9 | 1176.4 | 1177.2 | 1184.6 | 1232.8 | 1339.2 | 1354.0 |
| 37.5° | 1614.3 | 1568.1 | 1454.4 | 1344.6 | 1322.9 | 1280.4 | 1309.2 | 1332.0 | 1380.2 | 1543.3 | 1605.5 |
| 40°   | 1740.9 | 1706.7 | 1533.3 | 1469.7 | 1409.9 | 1413.9 | 1467.8 | 1467.5 | 1581.2 | 1749.4 | 1844.4 |
| 42.5° | 1858.1 | 1820.7 | 1657.3 | 1593.5 | 1536.7 | 1550.7 | 1566.1 | 1593.2 | 1811.3 | 2082.4 | 2125.8 |
| 45°   | 1952.4 | 1870.6 | 1753.1 | 1738.9 | 1692.1 | 1673.6 | 1738.9 | 1782.2 | 2086.4 | 2351.9 | 2377.0 |
| 47.5° | 2016.6 | 1949.3 | 1834.4 | 1821.9 | 1787.4 | 1832.7 | 2010.9 | 2038.8 | 2299.7 | 2622.4 | 2620.5 |
| 50°   | 2114.1 | 2022.0 | 1918.2 | 1911.7 | 2008.9 | 2033.1 | 2250.4 | 2247.5 | 2507.3 | 2847.1 | 2800.1 |
| 52.5° | 2226.4 | 2110.4 | 1997.8 | 2068.2 | 2216.5 | 2228.4 | 2416.9 | 2493.6 | 2733.9 | 3063.8 | 2940.9 |
| 55°   | 2355.6 | 2225.9 | 2116.9 | 2211.0 | 2431.7 | 2396.4 | 2587.1 | 2774.4 | 3017.6 | 3292.2 | 3042.7 |
| 57.5° | 2515.5 | 2358.2 | 2270.1 | 2413.2 | 2628.2 | 2659.5 | 2830.9 | 3066.7 | 3246.0 | 3434.2 | 3116.8 |
| 60°   | 2684.3 | 2499.6 | 2418.9 | 2555.2 | 2903.3 | 2939.2 | 3106.9 | 3309.6 | 3502.0 | 3567.9 | 3102.9 |
| 62.5° | 2845.4 | 2645.5 | 2572.6 | 2740.8 | 3208.4 | 3297.3 | 3421.0 | 3550.2 | 3715.0 | 3600.4 | 2933.8 |
| 65°   | 3024.7 | 2824.6 | 2778.7 | 3031.0 | 3622.0 | 3710.4 | 3872.1 | 3833.3 | 3788.0 | 3485.2 | 2654.1 |
| 67.5° | 3214.6 | 3011.3 | 3019.9 | 3367.7 | 4109.9 | 4125.0 | 4373.3 | 4115.6 | 3702.2 | 3180.1 | 2184.5 |
| 70°   | 3316.7 | 3108.6 | 3196.7 | 3726.7 | 4606.3 | 4584.6 | 4635.3 | 4191.4 | 3352.3 | 2513.8 | 1505.7 |
| 72.5° | 3193.0 | 3007.3 | 3168.7 | 3877.8 | 4858.9 | 4835.5 | 4488.2 | 3741.2 | 2621.0 | 1563.3 | 780.6  |
| 75°   | 2703.4 | 2524.4 | 2771.3 | 3456.7 | 4374.2 | 4395.8 | 3819.6 | 2782.1 | 1500.5 | 628.7  | 324.2  |
| 77.5° | 1837.0 | 1744.6 | 1956.1 | 2576.5 | 3249.1 | 3324.1 | 2834.0 | 1626.8 | 630.1  | 260.3  | 196.2  |
| 80°   | 970.8  | 926.9  | 1083.1 | 1484.3 | 2057.4 | 2113.2 | 1666.5 | 810.3  | 322.7  | 168.5  | 140.0  |
| 82.5° | 527.5  | 508.9  | 592.7  | 763.2  | 1169.0 | 1217.7 | 864.2  | 538.3  | 217.5  | 105.5  | 85.5   |
| 85°   | 354.4  | 347.3  | 402.9  | 410.0  | 552.8  | 568.8  | 452.8  | 414.6  | 130.6  | 51.6   | 56.5   |
| 87.5° | 177.3  | 170.2  | 212.1  | 187.3  | 211.0  | 211.3  | 207.6  | 264.6  | 33.1   | 17.1   | 10.3   |
| 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°    | 386.0  | 386.0  | 386.0 | 386.0 | 386.0 | 386.0 | 386.0 | 386.0 | 386.0 | 386.0 | 386.0 |
| 2.5°  | 465.9  | 455.9  | 421.4 | 421.1 | 426.2 | 422.8 | 425.4 | 411.4 | 405.4 | 432.8 | 431.4 |
| 5°    | 579.1  | 549.1  | 520.3 | 510.3 | 498.7 | 473.3 | 474.7 | 475.0 | 470.7 | 487.0 | 488.1 |
| 7.5°  | 645.5  | 609.6  | 583.1 | 530.0 | 488.4 | 455.9 | 460.2 | 465.0 | 460.2 | 481.8 | 489.8 |
| 10°   | 655.2  | 626.7  | 595.0 | 536.0 | 508.4 | 479.0 | 449.3 | 423.1 | 420.0 | 410.0 | 413.1 |
| 12.5° | 712.8  | 689.1  | 623.0 | 558.2 | 526.0 | 481.0 | 426.8 | 396.9 | 371.8 | 376.1 | 368.1 |
| 15°   | 760.1  | 743.3  | 664.0 | 579.3 | 502.4 | 446.5 | 388.9 | 347.8 | 325.3 | 322.7 | 314.8 |
| 17.5° | 824.3  | 800.3  | 667.7 | 564.8 | 471.9 | 404.9 | 339.9 | 293.4 | 283.7 | 279.7 | 275.7 |
| 20°   | 855.0  | 812.0  | 654.3 | 519.2 | 436.2 | 355.2 | 291.4 | 251.5 | 248.6 | 255.7 | 254.3 |
| 22.5° | 881.8  | 821.7  | 642.4 | 491.5 | 380.6 | 305.1 | 258.3 | 232.1 | 228.9 | 238.1 | 239.8 |
| 25°   | 897.5  | 849.3  | 629.2 | 463.3 | 346.1 | 267.7 | 233.5 | 218.7 | 219.3 | 231.2 | 229.8 |
| 27.5° | 968.2  | 859.0  | 596.2 | 429.9 | 306.5 | 240.1 | 221.5 | 213.8 | 210.7 | 227.2 | 228.7 |
| 30°   | 1012.7 | 922.3  | 588.8 | 394.6 | 277.1 | 219.8 | 210.7 | 207.6 | 207.0 | 226.9 | 228.4 |
| 32.5° | 1095.4 | 943.4  | 592.2 | 356.1 | 250.6 | 213.5 | 202.7 | 202.4 | 208.1 | 227.2 | 229.5 |
| 35°   | 1210.0 | 1032.4 | 575.6 | 334.1 | 236.1 | 203.9 | 196.4 | 198.7 | 208.4 | 229.2 | 232.4 |
| 37.5° | 1433.5 | 1116.2 | 580.8 | 313.6 | 231.2 | 200.7 | 194.7 | 196.2 | 211.8 | 234.4 | 242.9 |
| 40°   | 1610.6 | 1268.2 | 572.8 | 303.4 | 224.7 | 200.1 | 191.0 | 196.7 | 211.6 | 237.2 | 244.9 |
| 42.5° | 1867.2 | 1389.3 | 573.6 | 293.1 | 224.4 | 197.9 | 190.5 | 197.3 | 211.0 | 234.6 | 245.2 |
| 45°   | 2087.3 | 1498.0 | 585.9 | 287.1 | 221.5 | 201.6 | 189.6 | 198.2 | 207.3 | 225.5 | 237.2 |
| 47.5° | 2267.8 | 1619.1 | 598.4 | 281.4 | 220.4 | 205.0 | 188.7 | 192.2 | 201.0 | 215.3 | 225.8 |
| 50°   | 2414.9 | 1704.4 | 614.4 | 280.3 | 220.4 | 203.3 | 186.5 | 186.2 | 193.6 | 205.0 | 215.0 |
| 52.5° | 2529.5 | 1764.6 | 625.2 | 281.7 | 220.4 | 196.7 | 183.6 | 181.3 | 185.9 | 194.2 | 204.1 |
| 55°   | 2612.5 | 1783.1 | 616.4 | 285.4 | 220.1 | 190.7 | 178.5 | 176.5 | 178.8 | 184.5 | 193.9 |
| 57.5° | 2645.8 | 1734.3 | 563.7 | 278.8 | 220.1 | 186.5 | 172.2 | 169.9 | 172.2 | 176.5 | 185.9 |
| 60°   | 2562.3 | 1577.5 | 487.5 | 262.0 | 215.8 | 180.8 | 165.1 | 163.7 | 167.1 | 170.8 | 179.9 |
| 62.5° | 2352.7 | 1369.1 | 406.3 | 242.1 | 207.0 | 175.9 | 158.2 | 158.5 | 163.9 | 169.1 | 178.2 |
| 65°   | 2027.1 | 1117.1 | 338.7 | 221.8 | 195.9 | 168.2 | 151.1 | 153.1 | 160.8 | 167.6 | 176.8 |
| 67.5° | 1595.2 | 827.7  | 285.1 | 202.1 | 180.2 | 155.7 | 143.1 | 143.7 | 149.1 | 155.7 | 164.5 |
| 70°   | 1066.3 | 526.6  | 234.4 | 179.0 | 159.7 | 139.4 | 130.9 | 128.9 | 127.4 | 133.1 | 140.8 |
| 72.5° | 540.9  | 311.1  | 192.4 | 153.1 | 137.4 | 121.7 | 115.2 | 110.1 | 106.1 | 109.5 | 115.5 |
| 75°   | 283.4  | 217.5  | 155.4 | 127.2 | 113.5 | 103.5 | 98.6  | 91.8  | 89.0  | 91.0  | 95.2  |
| 77.5° | 200.4  | 170.2  | 125.7 | 100.6 | 92.4  | 82.1  | 83.0  | 75.8  | 73.6  | 74.7  | 79.3  |
| 80°   | 154.0  | 134.9  | 96.7  | 76.1  | 71.3  | 61.3  | 64.1  | 59.9  | 57.0  | 56.5  | 59.9  |
| 82.5° | 104.9  | 101.5  | 68.7  | 53.3  | 49.9  | 42.8  | 46.8  | 45.0  | 41.3  | 39.1  | 40.8  |
| 85°   | 70.7   | 67.3   | 41.9  | 30.8  | 29.4  | 22.2  | 28.5  | 27.4  | 24.2  | 20.8  | 21.1  |
| 87.5° | 12.3   | 22.5   | 12.0  | 7.7   | 7.1   | 2.6   | 6.6   | 6.3   | 5.7   | 2.9   | 2.3   |
| 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)