

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: P597175

Luminaire Tested: **MSA-SA4D-835-U-T4FT-HSS**

Issue Date: 5/27/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P597175  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-13)  
Test Lab: INNOVATIONS CENTER  
Issue Date: 5/27/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: INVUE  
Catalog Number: MSA-SA4D-835-U-T4FT-HSS  
Description: MESA POST TOP DECORATIVE LUMINAIRE. (4) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV FORWARD THROW OPTICS WITH HOUSE SIDE SHIELD  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 16241 lumens  
Efficiency: N/A  
Efficacy: 62.7 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B1 - U0 - G4

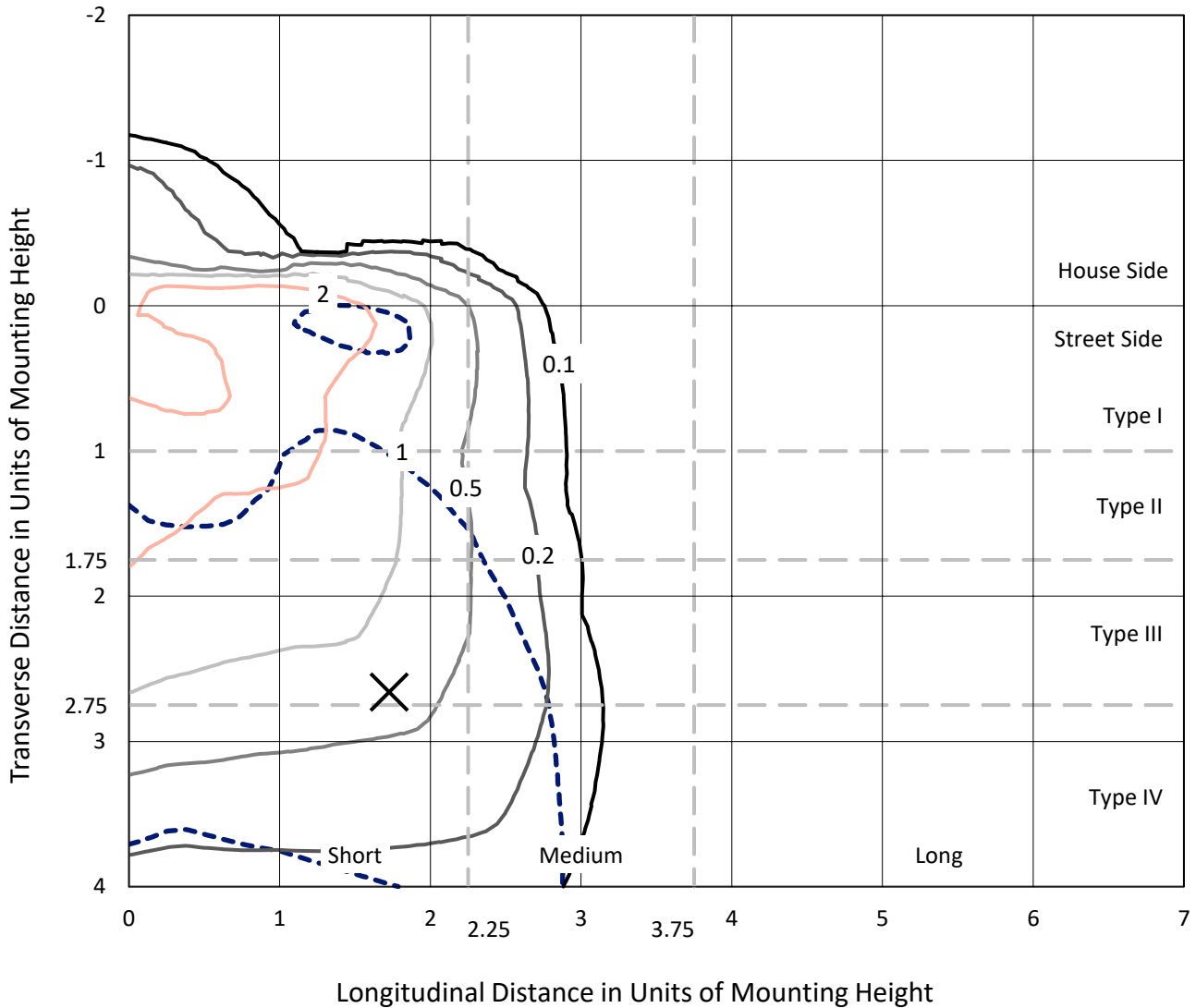
Input Watts (W): 259  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

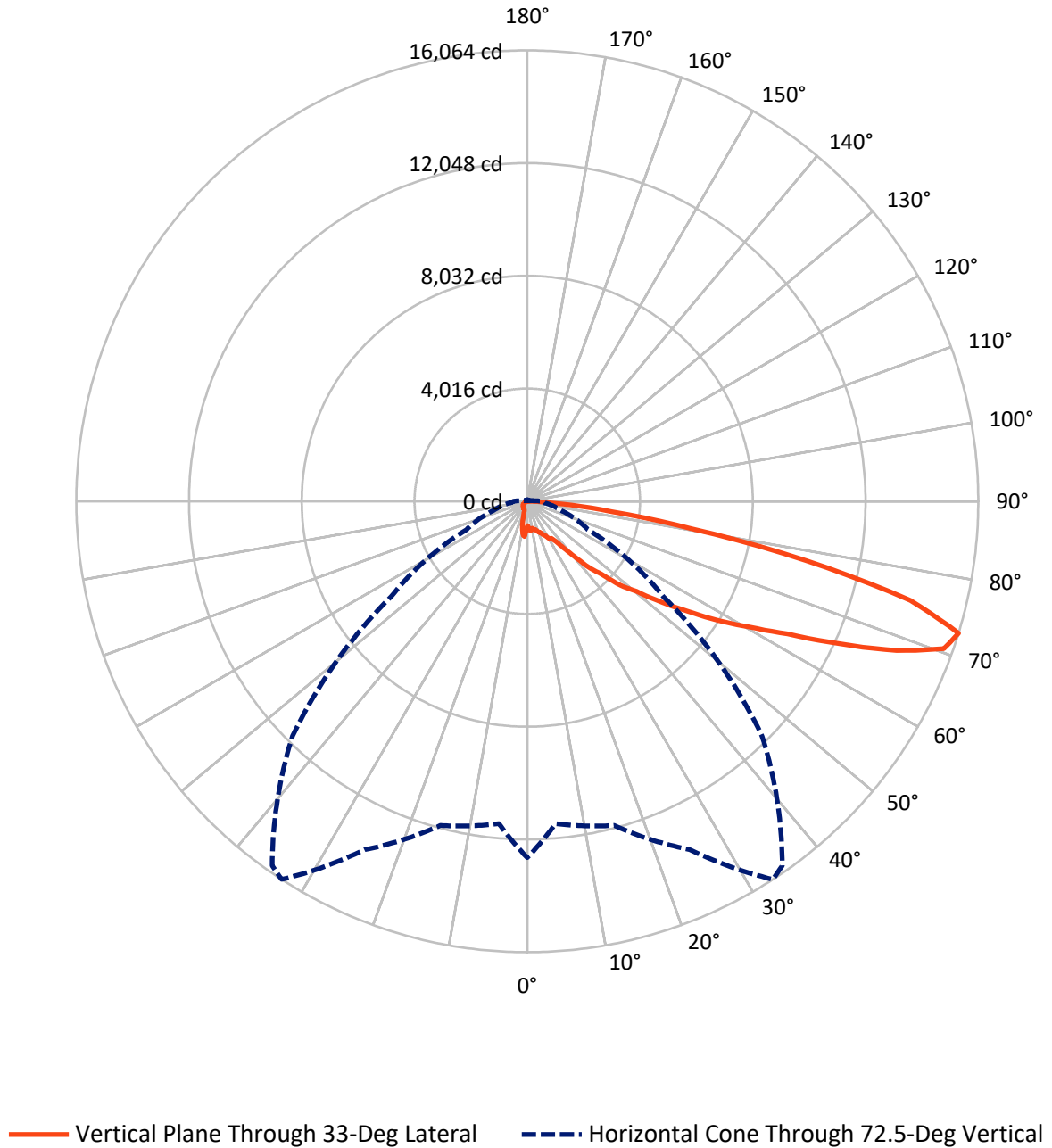
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 4.1 fc  
 Type IV - Short - N/A

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### Luminous Intensity Polar Plot



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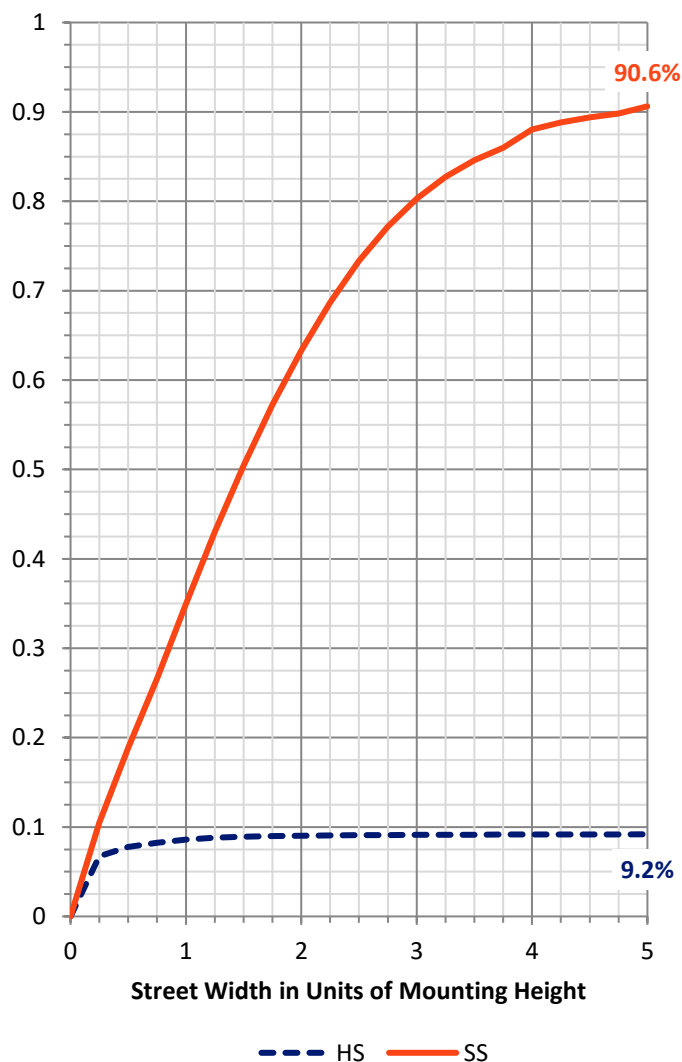
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 1501.7   | 0.0    | 1501.7  |
|                    | % Fixture | 9.2      | 0.0    | 9.2     |
| <b>Street Side</b> | Lumens    | 14739.3  | 0.0    | 14739.3 |
|                    | % Fixture | 90.8     | 0.0    | 90.8    |
| <b>Total</b>       | Lumens    | 16241.0  | 0.0    | 16241.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 111.8   | 0.7       |
| 10°-20°   | 333.2   | 2.1       |
| 20°-30°   | 565.0   | 3.5       |
| 30°-40°   | 1034.0  | 6.4       |
| 40°-50°   | 2182.4  | 13.4      |
| 50°-60°   | 3651.4  | 22.5      |
| 60°-70°   | 4887.5  | 30.1      |
| 70°-80°   | 3192.6  | 19.7      |
| 80°-90°   | 283.0   | 1.7       |
| 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°    | 16241.0 | 100.0     |
| 0°-180°   | 16241.0 | 100.0     |

**Coefficient of Utilization**



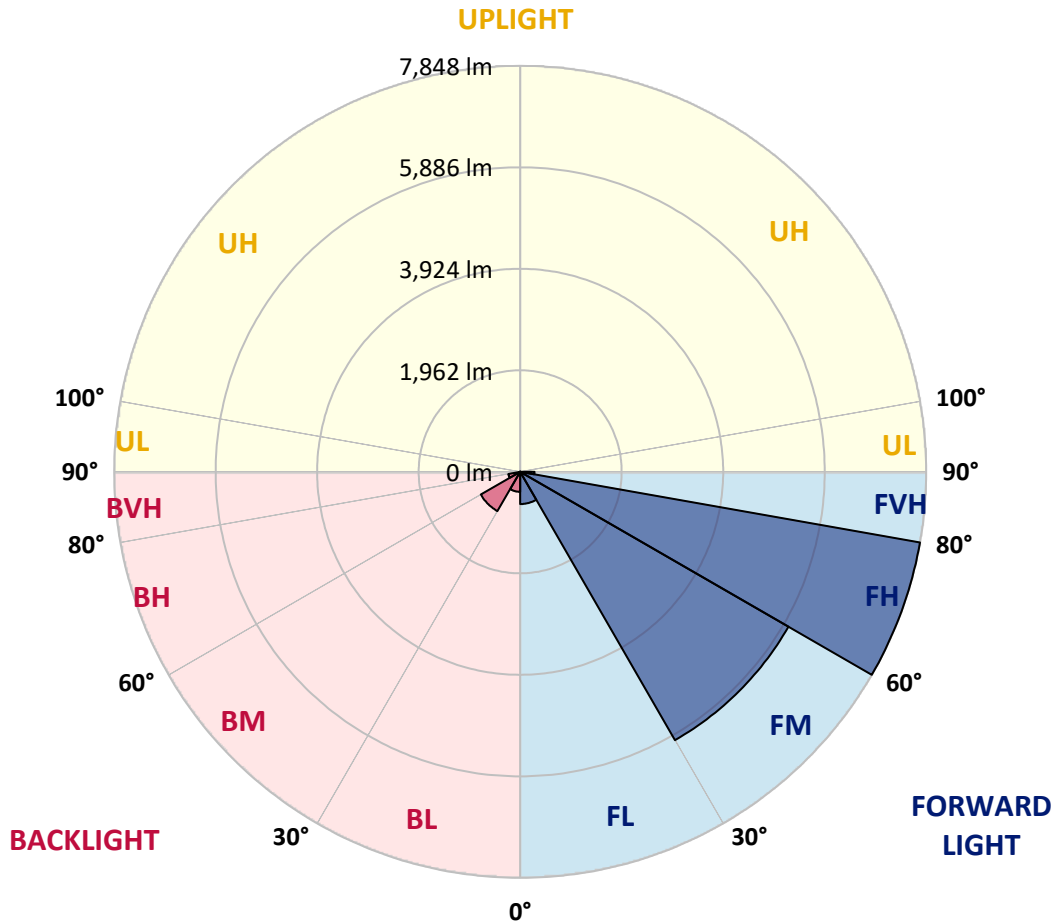
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone           | Lumens | % Fixture | Zone Rating/Lumen Limit |      |          |
|----------------|--------|-----------|-------------------------|------|----------|
|                |        |           | B                       | U    | G        |
| FL (0°-30°)    | 623.5  | 3.8       |                         |      |          |
| FM (30°-60°)   | 5989.9 | 36.9      |                         |      |          |
| FH (60°-80°)   | 7848.3 | 48.3      |                         |      | G4/12000 |
| FVH (80°-90°)  | 277.6  | 1.7       |                         |      | G3/500   |
| BL (0°-30°)    | 386.5  | 2.4       | B1/500                  |      |          |
| BM (30°-60°)   | 877.9  | 5.4       | B1/1000                 |      |          |
| BH (60°-80°)   | 231.8  | 1.4       | B1/500                  |      | G1/500   |
| BVH (80°-90°)  | 5.5    | 0.0       |                         |      | G0/10    |
| UL (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |          |
| UH (100°-180°) | 0.0    | 0.0       |                         | U0/0 |          |

**BUG Rating: B1-U0-G4**

Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 5°      | 15°     | 25°     | 33°     | 35°     | 45°     | 55°    | 65°    | 75°    | 85°    |
|-------|---------|---------|---------|---------|---------|---------|---------|--------|--------|--------|--------|
| 0°    | 863.8   | 863.8   | 863.8   | 863.8   | 863.8   | 863.8   | 863.8   | 863.8  | 863.8  | 863.8  | 863.8  |
| 2.5°  | 1029.7  | 990.1   | 932.4   | 936.0   | 945.9   | 954.0   | 975.6   | 966.6  | 949.5  | 948.6  | 1029.7 |
| 5°    | 1091.1  | 1046.9  | 1043.3  | 1048.7  | 1046.0  | 1060.4  | 1042.4  | 1101.0 | 1150.6 | 1210.1 | 1305.7 |
| 7.5°  | 1061.3  | 1040.6  | 1014.4  | 1041.5  | 1040.6  | 1033.4  | 1045.1  | 1164.1 | 1284.0 | 1359.8 | 1517.6 |
| 10°   | 975.6   | 952.2   | 972.0   | 981.1   | 974.7   | 1006.3  | 1084.8  | 1182.1 | 1325.5 | 1484.2 | 1560.8 |
| 12.5° | 951.3   | 965.7   | 972.9   | 972.9   | 1033.4  | 1049.6  | 1169.5  | 1261.5 | 1431.9 | 1557.2 | 1780.0 |
| 15°   | 1046.0  | 1073.9  | 1024.3  | 1013.5  | 1032.5  | 1041.5  | 1174.9  | 1285.8 | 1504.0 | 1733.1 | 1919.7 |
| 17.5° | 1196.6  | 1194.8  | 1118.1  | 1075.7  | 1105.5  | 1127.1  | 1201.1  | 1330.9 | 1459.0 | 1871.0 | 2141.5 |
| 20°   | 1300.3  | 1302.1  | 1164.1  | 1075.7  | 1174.0  | 1186.6  | 1268.7  | 1372.4 | 1473.4 | 1940.5 | 2286.7 |
| 22.5° | 1433.7  | 1385.9  | 1233.5  | 1147.9  | 1214.6  | 1226.3  | 1316.5  | 1398.5 | 1547.3 | 1932.4 | 2472.5 |
| 25°   | 1542.8  | 1512.2  | 1320.1  | 1260.6  | 1320.1  | 1303.9  | 1385.9  | 1509.5 | 1626.7 | 2061.3 | 2581.6 |
| 27.5° | 1712.3  | 1660.0  | 1381.4  | 1392.2  | 1388.6  | 1400.3  | 1419.3  | 1608.6 | 1766.4 | 2067.6 | 2834.1 |
| 30°   | 1870.1  | 1839.5  | 1518.5  | 1518.5  | 1553.6  | 1531.1  | 1544.6  | 1773.7 | 1901.7 | 2213.7 | 3118.1 |
| 32.5° | 2033.3  | 2035.1  | 1679.9  | 1594.2  | 1566.3  | 1659.1  | 1750.2  | 1853.9 | 2064.9 | 2464.4 | 3552.7 |
| 35°   | 2465.3  | 2429.2  | 1989.2  | 1775.5  | 1752.9  | 1747.5  | 1893.6  | 2174.0 | 2354.3 | 2790.8 | 4137.9 |
| 37.5° | 3335.4  | 3210.1  | 2654.6  | 2186.6  | 2101.9  | 2073.0  | 2238.9  | 2526.6 | 2706.0 | 3270.5 | 5105.4 |
| 40°   | 4228.1  | 3998.2  | 3381.4  | 2853.9  | 2578.9  | 2454.4  | 2647.4  | 2891.8 | 3211.0 | 3800.7 | 6000.8 |
| 42.5° | 5011.7  | 4727.6  | 3928.7  | 3573.5  | 3215.5  | 3161.4  | 2980.1  | 3377.8 | 3932.3 | 4572.5 | 6878.2 |
| 45°   | 5775.4  | 5216.4  | 4415.6  | 4134.3  | 3699.7  | 3730.4  | 3669.0  | 4013.5 | 4681.6 | 5418.3 | 7656.4 |
| 47.5° | 6301.1  | 5798.9  | 5012.6  | 4647.4  | 4473.4  | 4293.9  | 4780.8  | 5138.8 | 5348.9 | 5955.8 | 8329.0 |
| 50°   | 6867.4  | 6358.8  | 5525.6  | 5270.5  | 5041.4  | 5222.7  | 5854.8  | 5902.6 | 5885.4 | 6457.1 | 8787.1 |
| 52.5° | 7598.7  | 6999.0  | 6114.5  | 5825.9  | 5955.8  | 6136.1  | 6865.6  | 6874.6 | 6362.4 | 6879.1 | 9117.1 |
| 55°   | 8274.9  | 7610.4  | 6898.9  | 6626.6  | 6898.0  | 7050.4  | 7859.3  | 7562.6 | 6640.1 | 7165.8 | 9279.4 |
| 57.5° | 9228.0  | 8458.9  | 7942.2  | 7462.5  | 8012.5  | 7866.5  | 8733.0  | 8292.1 | 6952.1 | 7356.1 | 9219.9 |
| 60°   | 10432.7 | 9527.4  | 9009.8  | 8502.2  | 9091.9  | 9191.1  | 9586.0  | 8656.4 | 7073.0 | 7418.3 | 8861.9 |
| 62.5° | 11658.1 | 10747.4 | 10066.6 | 9722.2  | 10391.2 | 10717.7 | 10375.9 | 8837.6 | 6927.8 | 7296.6 | 8051.3 |
| 65°   | 13178.4 | 12012.5 | 11217.2 | 11015.2 | 12255.1 | 12734.8 | 11310.1 | 8881.8 | 6647.4 | 6626.6 | 6473.3 |
| 67.5° | 14219.9 | 13084.6 | 12355.2 | 12693.3 | 14191.0 | 14229.8 | 12148.7 | 8895.3 | 5703.3 | 5188.4 | 4248.8 |
| 70°   | 14466.9 | 13251.4 | 12925.0 | 13920.5 | 15735.6 | 15247.8 | 12419.2 | 8210.0 | 4229.9 | 3079.3 | 1942.3 |
| 72.5° | 12699.6 | 11529.2 | 11953.9 | 13688.8 | 16063.9 | 15840.2 | 11821.3 | 5923.3 | 2381.4 | 1231.7 | 596.0  |
| 75°   | 7789.8  | 7082.0  | 8967.4  | 11605.8 | 14100.8 | 13956.6 | 9222.6  | 3060.4 | 959.4  | 492.3  | 222.7  |
| 77.5° | 3387.7  | 3146.0  | 4679.8  | 7700.6  | 10132.4 | 10003.5 | 5403.9  | 1127.1 | 495.9  | 346.3  | 112.7  |
| 80°   | 1120.8  | 1087.5  | 1772.8  | 3646.5  | 5935.0  | 5821.4  | 2276.8  | 468.9  | 353.5  | 277.7  | 63.1   |
| 82.5° | 266.0   | 264.2   | 618.6   | 1678.1  | 3023.4  | 2928.7  | 698.8   | 258.8  | 256.1  | 219.1  | 33.4   |
| 85°   | 66.7    | 68.5    | 171.3   | 686.2   | 1228.1  | 1082.9  | 182.1   | 128.9  | 180.3  | 148.8  | 17.1   |
| 87.5° | 0.0     | 0.0     | 44.2    | 98.3    | 185.8   | 116.3   | 19.8    | 34.3   | 50.5   | 53.2   | 9.0    |
| 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°    | 863.8  | 863.8  | 863.8  | 863.8  | 863.8  | 863.8  | 863.8  | 863.8  | 863.8  | 863.8  | 863.8  |
| 2.5°  | 1047.8 | 1037.9 | 956.7  | 976.5  | 1007.2 | 1004.5 | 1024.3 | 1009.0 | 995.5  | 1062.2 | 1055.9 |
| 5°    | 1332.7 | 1278.6 | 1253.4 | 1288.5 | 1269.6 | 1225.4 | 1262.4 | 1256.1 | 1245.3 | 1267.8 | 1284.9 |
| 7.5°  | 1546.4 | 1496.8 | 1474.3 | 1400.3 | 1293.0 | 1208.3 | 1221.8 | 1190.2 | 1160.5 | 1195.7 | 1231.7 |
| 10°   | 1616.8 | 1589.7 | 1587.0 | 1442.7 | 1341.7 | 1219.1 | 1073.9 | 948.6  | 915.2  | 871.0  | 890.9  |
| 12.5° | 1807.9 | 1824.1 | 1722.3 | 1553.6 | 1358.9 | 1123.5 | 865.6  | 688.0  | 615.9  | 569.0  | 571.7  |
| 15°   | 1964.8 | 2021.6 | 1873.7 | 1570.8 | 1195.7 | 856.6  | 576.2  | 416.6  | 371.5  | 359.8  | 356.2  |
| 17.5° | 2198.4 | 2253.4 | 1920.6 | 1449.0 | 963.9  | 580.7  | 370.6  | 324.6  | 327.3  | 335.4  | 333.6  |
| 20°   | 2371.5 | 2363.4 | 1880.1 | 1233.5 | 710.5  | 380.5  | 310.2  | 303.9  | 318.3  | 341.7  | 336.3  |
| 22.5° | 2538.3 | 2482.4 | 1854.8 | 1034.3 | 459.9  | 305.7  | 299.4  | 298.5  | 312.0  | 334.5  | 340.8  |
| 25°   | 2657.3 | 2666.3 | 1812.4 | 809.7  | 334.5  | 284.0  | 289.4  | 297.6  | 311.1  | 335.4  | 331.8  |
| 27.5° | 2998.2 | 2745.7 | 1635.7 | 587.9  | 282.2  | 272.3  | 285.8  | 302.1  | 306.6  | 337.2  | 338.1  |
| 30°   | 3219.1 | 3045.1 | 1520.3 | 395.8  | 260.6  | 251.6  | 278.6  | 300.3  | 305.7  | 345.4  | 348.1  |
| 32.5° | 3604.1 | 3174.0 | 1386.8 | 294.0  | 242.6  | 245.3  | 262.4  | 291.3  | 316.5  | 358.9  | 360.7  |
| 35°   | 4082.9 | 3587.9 | 1145.2 | 264.2  | 236.2  | 231.7  | 239.9  | 273.2  | 314.7  | 360.7  | 369.7  |
| 37.5° | 4994.5 | 3835.8 | 908.0  | 256.1  | 236.2  | 228.1  | 236.2  | 256.1  | 309.3  | 378.7  | 397.7  |
| 40°   | 5605.0 | 4340.8 | 654.6  | 254.3  | 231.7  | 224.5  | 227.2  | 247.1  | 294.0  | 367.9  | 395.8  |
| 42.5° | 6357.0 | 4553.6 | 482.4  | 249.8  | 227.2  | 216.4  | 218.2  | 243.5  | 278.6  | 345.4  | 366.1  |
| 45°   | 6972.9 | 4708.7 | 379.6  | 248.0  | 216.4  | 212.8  | 216.4  | 240.8  | 264.2  | 296.7  | 315.6  |
| 47.5° | 7440.9 | 4889.0 | 304.8  | 236.2  | 213.7  | 212.8  | 208.3  | 225.4  | 239.9  | 248.0  | 260.6  |
| 50°   | 7783.5 | 4848.5 | 252.5  | 218.2  | 204.7  | 210.1  | 202.0  | 204.7  | 208.3  | 203.8  | 218.2  |
| 52.5° | 7993.6 | 4702.4 | 210.1  | 196.6  | 193.9  | 198.4  | 188.5  | 180.3  | 174.0  | 170.4  | 179.4  |
| 55°   | 8070.3 | 4409.3 | 178.5  | 168.6  | 174.9  | 176.7  | 168.6  | 154.2  | 143.4  | 138.0  | 145.2  |
| 57.5° | 7925.1 | 3963.0 | 155.1  | 139.8  | 154.2  | 154.2  | 143.4  | 128.0  | 115.4  | 106.4  | 113.6  |
| 60°   | 7557.2 | 3469.8 | 138.0  | 116.3  | 131.6  | 132.6  | 119.9  | 103.7  | 93.8   | 84.8   | 89.3   |
| 62.5° | 6871.9 | 2932.3 | 120.8  | 101.0  | 113.6  | 114.5  | 99.2   | 83.9   | 76.6   | 66.7   | 70.3   |
| 65°   | 5501.3 | 2242.5 | 102.8  | 89.3   | 98.3   | 95.6   | 82.1   | 71.2   | 62.2   | 53.2   | 55.0   |
| 67.5° | 3570.7 | 1384.1 | 89.3   | 81.2   | 83.0   | 80.3   | 69.4   | 62.2   | 52.3   | 45.1   | 46.0   |
| 70°   | 1598.7 | 596.0  | 78.4   | 73.0   | 72.1   | 67.6   | 58.6   | 57.7   | 51.4   | 45.1   | 45.1   |
| 72.5° | 493.2  | 224.5  | 67.6   | 65.8   | 62.2   | 56.8   | 51.4   | 55.0   | 50.5   | 43.3   | 42.4   |
| 75°   | 194.8  | 102.8  | 55.9   | 55.9   | 54.1   | 46.9   | 46.0   | 49.6   | 46.9   | 39.7   | 37.9   |
| 77.5° | 101.9  | 64.9   | 46.0   | 47.8   | 46.9   | 36.1   | 41.5   | 45.1   | 43.3   | 33.4   | 28.0   |
| 80°   | 60.4   | 39.7   | 34.3   | 38.8   | 37.9   | 25.2   | 31.6   | 28.9   | 20.7   | 9.9    | 2.7    |
| 82.5° | 33.4   | 18.0   | 15.3   | 22.5   | 22.5   | 9.0    | 16.2   | 14.4   | 8.1    | 0.0    | 0.0    |
| 85°   | 16.2   | 12.6   | 11.7   | 12.6   | 9.0    | 2.7    | 8.1    | 8.1    | 4.5    | 0.0    | 0.0    |
| 87.5° | 8.1    | 7.2    | 5.4    | 4.5    | 3.6    | 0.0    | 2.7    | 3.6    | 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)