

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: P367373

Luminaire Tested: **MSA-SA2B-830-U-SL2-HSS**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P367373  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-17)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/2/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: INVUE  
Catalog Number: MSA-SA2B-830-U-SL2-HSS  
Description: MESA POST TOP DECORATIVE LUMINAIRE. (2) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II SPILL LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6487 lumens  
Efficiency: N/A  
Efficacy: 76.3 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B1 - U0 - G2

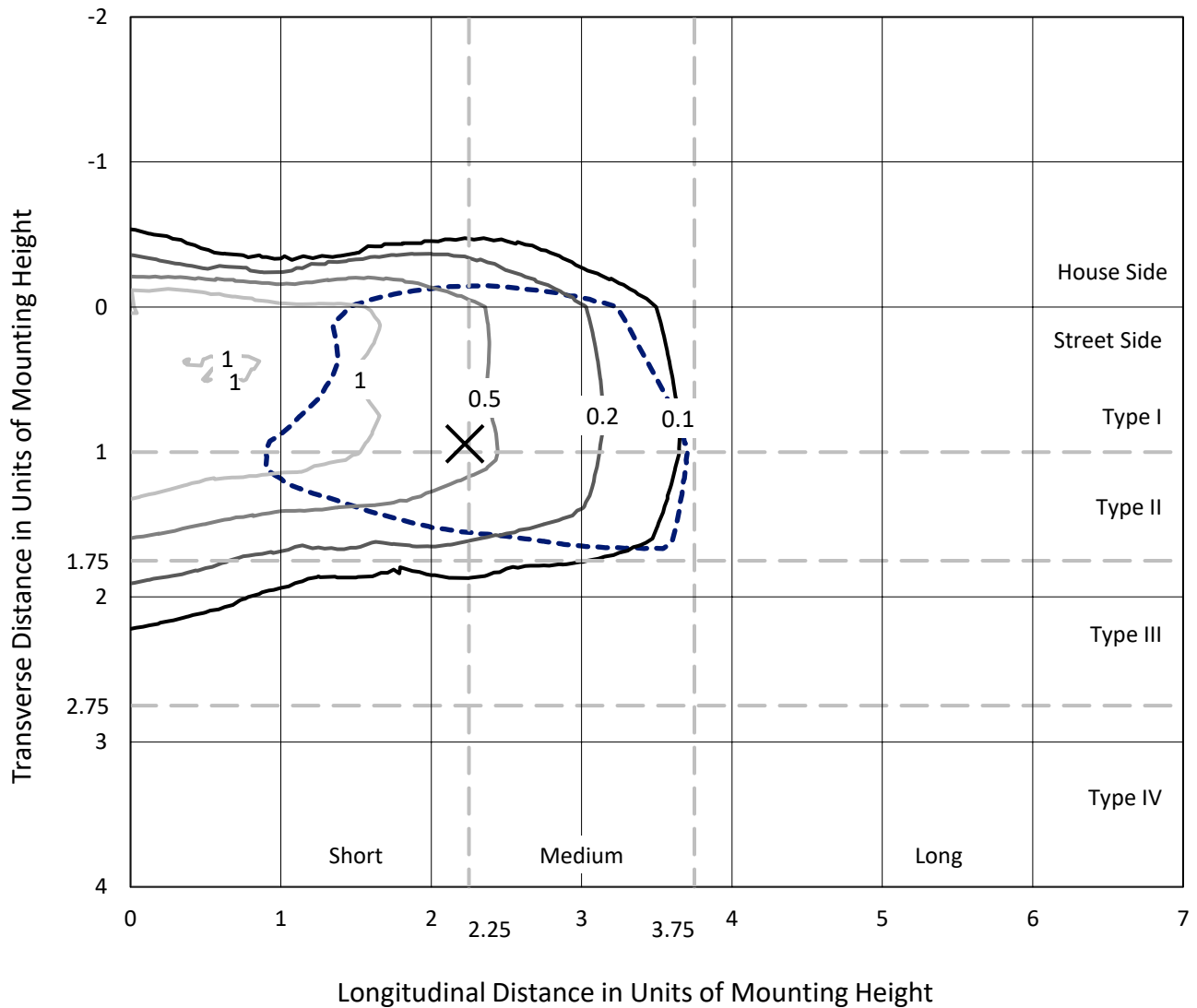
Input Watts (W): 85  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

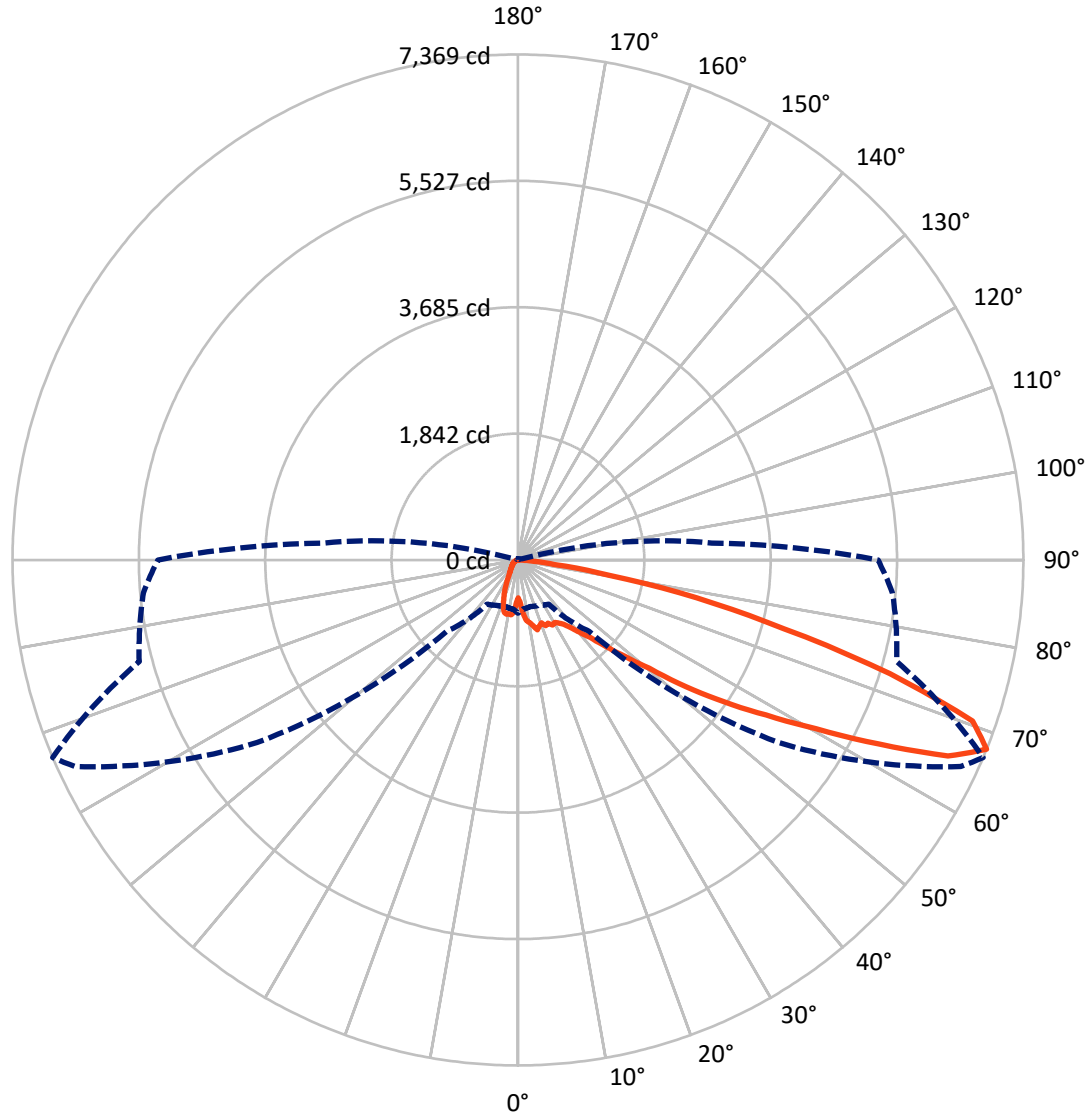
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 1.7 fc  
 Type II - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 67-Deg Lateral    - - - Horizontal Cone Through 67.5-Deg Vertical

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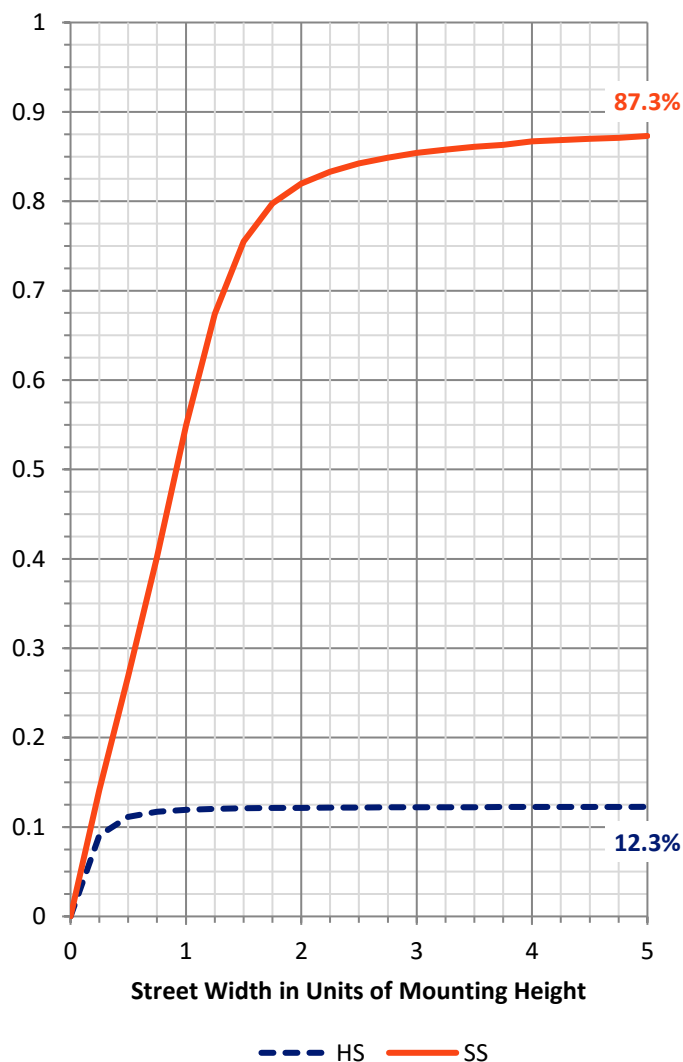
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 802.2    | 0.0    | 802.2  |
|                    | % Fixture | 12.4     | 0.0    | 12.4   |
| <b>Street Side</b> | Lumens    | 5684.7   | 0.0    | 5684.7 |
|                    | % Fixture | 87.6     | 0.0    | 87.6   |
| <b>Total</b>       | Lumens    | 6487.0   | 0.0    | 6487.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 69.4   | 1.1       |
| 10°-20°   | 205.2  | 3.2       |
| 20°-30°   | 321.6  | 5.0       |
| 30°-40°   | 518.5  | 8.0       |
| 40°-50°   | 952.8  | 14.7      |
| 50°-60°   | 1609.2 | 24.8      |
| 60°-70°   | 1779.1 | 27.4      |
| 70°-80°   | 931.2  | 14.4      |
| 80°-90°   | 100.0  | 1.5       |
| 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°    | 6487.0 | 100.0     |
| 0°-180°   | 6487.0 | 100.0     |

**Coefficient of Utilization**



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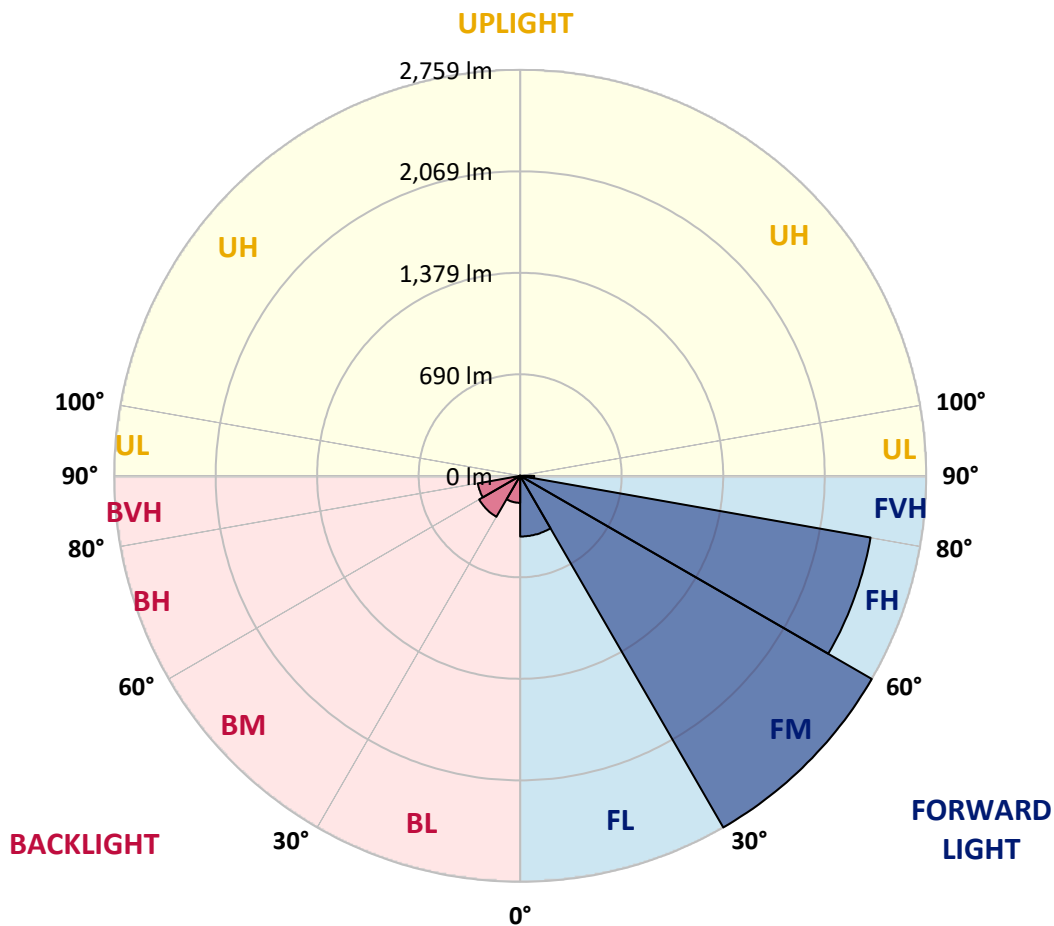
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone           | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|----------------|--------|-----------|-------------------------|------|---------|
|                |        |           | B                       | U    | G       |
| FL (0°-30°)    | 412.5  | 6.4       |                         |      |         |
| FM (30°-60°)   | 2758.9 | 42.5      |                         |      |         |
| FH (60°-80°)   | 2417.6 | 37.3      |                         |      | G2/5000 |
| FVH (80°-90°)  | 95.7   | 1.5       |                         |      | G1/100  |
| BL (0°-30°)    | 183.7  | 2.8       | B1/500                  |      |         |
| BM (30°-60°)   | 321.7  | 5.0       | B1/1000                 |      |         |
| BH (60°-80°)   | 292.6  | 4.5       | B1/500                  |      | G1/500  |
| BVH (80°-90°)  | 4.3    | 0.1       |                         |      | G0/10   |
| UL (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B1-U0-G2**

Type II Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 65°    | 67°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 552.5  | 552.5  | 552.5  | 552.5  | 552.5  | 552.5  | 552.5  | 552.5  | 552.5  | 552.5  | 552.5  |
| 2.5°  | 652.2  | 630.2  | 592.7  | 603.5  | 625.2  | 643.3  | 634.8  | 618.0  | 618.3  | 601.2  | 662.7  |
| 5°    | 758.8  | 729.2  | 707.5  | 715.1  | 714.1  | 713.4  | 753.9  | 769.4  | 775.9  | 804.2  | 846.0  |
| 7.5°  | 789.4  | 778.9  | 756.2  | 763.1  | 740.4  | 742.1  | 813.1  | 880.3  | 890.8  | 908.2  | 982.6  |
| 10°   | 777.6  | 757.2  | 765.4  | 765.4  | 765.7  | 802.6  | 850.3  | 914.5  | 927.3  | 994.5  | 1002.4 |
| 12.5° | 764.8  | 765.7  | 798.3  | 792.4  | 837.2  | 903.3  | 919.4  | 991.5  | 985.2  | 1043.5 | 1130.0 |
| 15°   | 812.5  | 837.5  | 816.4  | 824.7  | 828.9  | 906.6  | 932.6  | 1028.3 | 1056.0 | 1129.7 | 1186.0 |
| 17.5° | 894.4  | 897.7  | 853.9  | 842.1  | 873.0  | 895.1  | 947.4  | 993.5  | 1011.9 | 1205.4 | 1285.0 |
| 20°   | 909.2  | 930.3  | 885.9  | 817.4  | 882.9  | 913.2  | 949.7  | 971.7  | 979.6  | 1228.8 | 1341.0 |
| 22.5° | 998.4  | 975.0  | 904.0  | 852.0  | 870.7  | 903.6  | 926.3  | 992.8  | 1040.2 | 1184.7 | 1394.6 |
| 25°   | 1044.1 | 1037.9 | 970.1  | 925.7  | 906.6  | 904.0  | 956.0  | 1006.3 | 1021.4 | 1230.4 | 1407.8 |
| 27.5° | 1153.7 | 1139.6 | 1008.3 | 1002.7 | 939.8  | 884.5  | 956.9  | 1047.4 | 1075.7 | 1187.3 | 1457.1 |
| 30°   | 1302.8 | 1297.5 | 1122.8 | 1119.2 | 1019.1 | 919.8  | 1010.2 | 1072.8 | 1055.7 | 1209.3 | 1490.0 |
| 32.5° | 1452.8 | 1495.6 | 1316.9 | 1214.9 | 1139.9 | 1049.1 | 995.1  | 1064.9 | 1095.5 | 1263.0 | 1550.6 |
| 35°   | 1634.2 | 1665.1 | 1483.1 | 1409.1 | 1242.2 | 1109.6 | 1095.5 | 1140.2 | 1153.4 | 1326.8 | 1619.4 |
| 37.5° | 1951.4 | 1904.7 | 1749.7 | 1623.6 | 1536.1 | 1325.8 | 1256.1 | 1220.5 | 1251.1 | 1413.4 | 1759.9 |
| 40°   | 2185.7 | 2156.1 | 1965.2 | 1889.9 | 1688.5 | 1565.4 | 1383.1 | 1349.8 | 1384.1 | 1502.2 | 1857.6 |
| 42.5° | 2468.4 | 2406.8 | 2227.2 | 2176.1 | 1968.8 | 1731.6 | 1546.6 | 1558.2 | 1536.8 | 1677.6 | 2029.1 |
| 45°   | 2724.1 | 2585.2 | 2485.1 | 2496.7 | 2386.1 | 2065.6 | 1819.4 | 1813.8 | 1796.1 | 1931.6 | 2209.4 |
| 47.5° | 2896.2 | 2774.7 | 2677.3 | 2645.4 | 2632.2 | 2653.0 | 2213.7 | 2114.3 | 2101.1 | 2198.5 | 2493.4 |
| 50°   | 2988.6 | 2855.7 | 2735.2 | 2741.8 | 3009.0 | 3210.1 | 2620.4 | 2479.2 | 2484.2 | 2585.8 | 2881.7 |
| 52.5° | 2926.4 | 2776.0 | 2649.0 | 2772.4 | 3301.2 | 3581.6 | 3293.7 | 2956.0 | 3070.6 | 3044.6 | 3402.6 |
| 55°   | 2639.2 | 2508.5 | 2418.3 | 2639.2 | 3333.2 | 3981.4 | 4122.6 | 3673.7 | 3648.1 | 3588.8 | 3933.7 |
| 57.5° | 2155.7 | 2043.2 | 1987.6 | 2220.6 | 2984.0 | 4303.6 | 4955.2 | 4484.9 | 4266.1 | 4018.0 | 4374.7 |
| 60°   | 1606.2 | 1523.3 | 1465.4 | 1588.4 | 2351.2 | 3990.6 | 5500.4 | 5249.3 | 4996.0 | 4431.6 | 4770.9 |
| 62.5° | 1189.6 | 1122.1 | 1060.6 | 1071.8 | 1619.0 | 3432.2 | 5709.7 | 6059.2 | 5913.7 | 4868.3 | 5144.7 |
| 65°   | 949.4  | 887.8  | 844.7  | 820.0  | 1002.7 | 2582.2 | 5418.5 | 6722.9 | 6890.7 | 5279.6 | 5414.5 |
| 67.5° | 775.3  | 723.3  | 701.9  | 730.2  | 786.5  | 1471.9 | 4640.6 | 7125.7 | 7369.2 | 5716.0 | 5481.0 |
| 70°   | 630.8  | 588.1  | 585.7  | 662.1  | 724.3  | 897.4  | 3413.5 | 6847.6 | 7030.9 | 5790.3 | 5082.5 |
| 72.5° | 439.6  | 420.9  | 450.8  | 559.1  | 717.7  | 747.3  | 1960.3 | 5666.6 | 5673.2 | 5114.1 | 4180.5 |
| 75°   | 248.8  | 245.8  | 293.2  | 445.9  | 698.9  | 739.8  | 1092.8 | 4004.5 | 4007.4 | 3867.9 | 2896.2 |
| 77.5° | 136.9  | 128.0  | 170.8  | 301.4  | 600.2  | 722.6  | 704.9  | 2734.3 | 2664.2 | 2152.5 | 1322.9 |
| 80°   | 63.2   | 59.6   | 92.5   | 193.2  | 439.0  | 683.5  | 565.0  | 1502.9 | 1355.1 | 701.3  | 322.8  |
| 82.5° | 26.0   | 24.7   | 42.5   | 124.1  | 277.4  | 550.5  | 476.2  | 666.7  | 535.1  | 133.3  | 99.7   |
| 85°   | 4.6    | 4.9    | 17.4   | 75.0   | 155.3  | 253.7  | 386.0  | 316.6  | 232.7  | 36.9   | 54.6   |
| 87.5° | 0.0    | 0.0    | 3.6    | 18.1   | 37.5   | 69.4   | 156.6  | 88.5   | 60.9   | 10.9   | 16.1   |
| 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°    | 552.5  | 552.5  | 552.5 | 552.5 | 552.5 | 552.5 | 552.5 | 552.5 | 552.5 | 552.5 | 552.5 |
| 2.5°  | 674.9  | 669.3  | 612.7 | 615.4 | 619.3 | 615.7 | 615.0 | 599.2 | 584.8 | 632.5 | 631.8 |
| 5°    | 853.6  | 813.8  | 774.6 | 759.5 | 726.9 | 684.1 | 684.5 | 671.0 | 657.2 | 676.6 | 676.6 |
| 7.5°  | 981.0  | 926.0  | 876.3 | 787.8 | 701.6 | 623.6 | 616.7 | 598.3 | 577.2 | 602.5 | 607.5 |
| 10°   | 1010.6 | 962.9  | 898.7 | 768.7 | 687.1 | 611.1 | 527.5 | 458.7 | 426.8 | 412.0 | 409.4 |
| 12.5° | 1101.7 | 1066.2 | 922.7 | 778.9 | 661.4 | 532.8 | 395.9 | 314.3 | 258.6 | 254.4 | 248.4 |
| 15°   | 1162.6 | 1137.6 | 946.4 | 753.6 | 552.8 | 383.0 | 248.8 | 190.9 | 168.5 | 166.5 | 163.5 |
| 17.5° | 1257.1 | 1213.6 | 923.7 | 673.0 | 432.4 | 252.7 | 167.2 | 150.7 | 153.3 | 159.3 | 154.7 |
| 20°   | 1295.6 | 1210.7 | 874.3 | 556.1 | 303.7 | 169.5 | 145.1 | 136.2 | 143.1 | 148.7 | 146.1 |
| 22.5° | 1335.0 | 1219.2 | 830.6 | 458.4 | 198.4 | 140.2 | 129.3 | 124.7 | 125.4 | 131.0 | 131.3 |
| 25°   | 1334.7 | 1242.9 | 779.9 | 357.0 | 147.8 | 124.7 | 116.8 | 110.9 | 108.6 | 112.5 | 111.6 |
| 27.5° | 1399.5 | 1215.6 | 687.4 | 264.9 | 130.0 | 111.6 | 104.0 | 96.7  | 88.5  | 92.5  | 92.5  |
| 30°   | 1399.9 | 1260.0 | 622.9 | 190.2 | 119.1 | 99.4  | 92.8  | 81.6  | 72.1  | 75.4  | 75.7  |
| 32.5° | 1437.1 | 1221.5 | 563.4 | 145.4 | 110.6 | 92.1  | 77.7  | 67.5  | 61.9  | 63.8  | 63.8  |
| 35°   | 1479.5 | 1254.4 | 471.9 | 128.3 | 102.0 | 81.9  | 66.5  | 58.2  | 54.0  | 55.6  | 55.6  |
| 37.5° | 1619.7 | 1247.5 | 408.4 | 119.5 | 96.4  | 74.0  | 60.5  | 51.3  | 49.4  | 50.3  | 51.7  |
| 40°   | 1670.4 | 1296.5 | 322.2 | 114.2 | 87.2  | 66.8  | 53.3  | 46.4  | 43.8  | 44.4  | 44.8  |
| 42.5° | 1799.4 | 1307.4 | 257.3 | 109.9 | 79.0  | 57.9  | 47.4  | 42.5  | 39.2  | 39.2  | 40.1  |
| 45°   | 1941.8 | 1334.7 | 204.7 | 106.3 | 72.1  | 52.0  | 42.8  | 38.8  | 33.9  | 33.2  | 34.6  |
| 47.5° | 2148.2 | 1439.4 | 166.8 | 99.1  | 63.8  | 48.4  | 39.5  | 33.6  | 29.6  | 28.3  | 29.6  |
| 50°   | 2493.4 | 1617.1 | 147.4 | 90.2  | 57.9  | 45.4  | 34.9  | 28.6  | 25.7  | 24.0  | 25.0  |
| 52.5° | 2980.4 | 1924.1 | 137.2 | 81.9  | 52.7  | 40.8  | 31.3  | 25.0  | 22.0  | 20.7  | 21.4  |
| 55°   | 3521.4 | 2276.2 | 132.3 | 73.7  | 48.0  | 35.9  | 27.3  | 22.0  | 19.4  | 17.8  | 18.1  |
| 57.5° | 4021.6 | 2607.2 | 127.4 | 65.8  | 43.4  | 31.9  | 24.0  | 19.4  | 16.8  | 15.1  | 15.5  |
| 60°   | 4514.5 | 2871.5 | 115.5 | 56.6  | 39.2  | 28.6  | 21.1  | 16.8  | 15.1  | 13.2  | 13.2  |
| 62.5° | 4950.5 | 3029.4 | 98.4  | 49.0  | 35.2  | 25.3  | 18.8  | 15.1  | 13.8  | 11.8  | 11.8  |
| 65°   | 5247.4 | 3036.7 | 79.3  | 42.1  | 30.9  | 21.7  | 16.5  | 14.2  | 12.8  | 10.5  | 10.2  |
| 67.5° | 5251.6 | 2839.2 | 63.5  | 37.5  | 27.3  | 19.1  | 14.8  | 13.5  | 11.8  | 9.9   | 9.2   |
| 70°   | 4700.5 | 2345.6 | 53.0  | 32.9  | 23.7  | 16.8  | 12.8  | 12.8  | 11.5  | 9.5   | 8.6   |
| 72.5° | 3760.0 | 1792.5 | 44.4  | 28.6  | 21.1  | 14.5  | 11.8  | 12.2  | 11.2  | 9.5   | 8.6   |
| 75°   | 2527.3 | 1028.0 | 36.9  | 24.4  | 18.4  | 12.2  | 11.5  | 11.8  | 11.5  | 9.5   | 8.2   |
| 77.5° | 1163.9 | 327.4  | 28.6  | 20.1  | 15.8  | 10.2  | 11.2  | 11.2  | 10.5  | 8.6   | 7.2   |
| 80°   | 262.3  | 80.6   | 20.7  | 14.8  | 12.8  | 7.6   | 10.2  | 9.2   | 8.2   | 5.9   | 4.3   |
| 82.5° | 95.4   | 24.7   | 12.5  | 9.2   | 7.9   | 3.0   | 6.6   | 6.6   | 5.9   | 4.3   | 2.6   |
| 85°   | 54.6   | 12.8   | 6.9   | 5.9   | 4.3   | 1.3   | 3.6   | 3.9   | 3.3   | 3.0   | 1.3   |
| 87.5° | 17.8   | 3.0    | 3.3   | 3.6   | 3.3   | 0.7   | 1.3   | 1.3   | 1.0   | 0.7   | 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)