

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: P596545

Luminaire Tested: **MSA-SA1D-827-U-SL2-HSS**

Issue Date: 5/27/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P596545  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-17)  
Test Lab: INNOVATIONS CENTER  
Issue Date: 5/27/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: INVUE  
Catalog Number: MSA-SA1D-827-U-SL2-HSS  
Description: MESA POST TOP DECORATIVE LUMINAIRE. (1) 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: 4132 lumens  
Efficiency: N/A  
Efficacy: 61.7 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B1 - U0 - G1

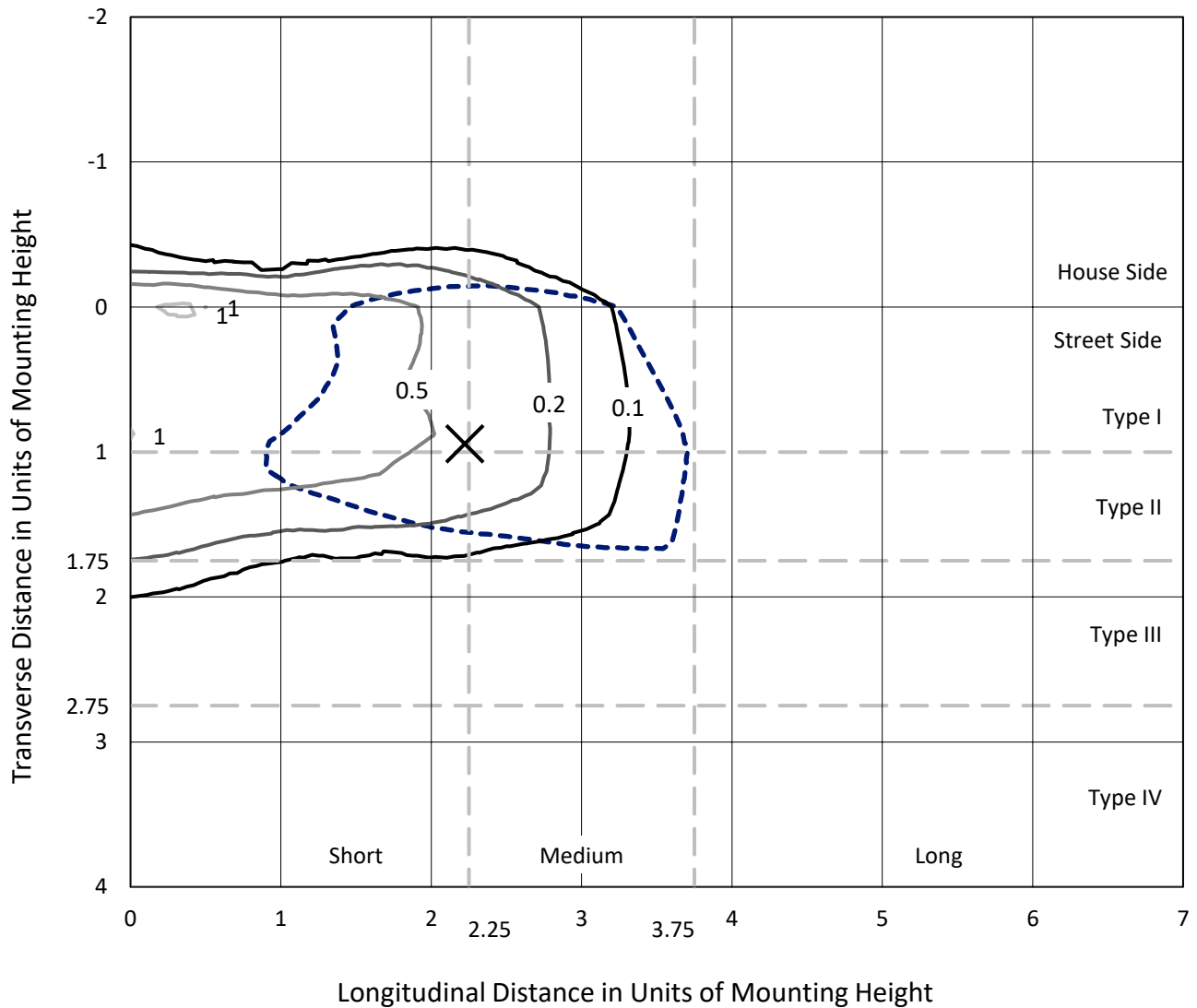
Input Watts (W): 67  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

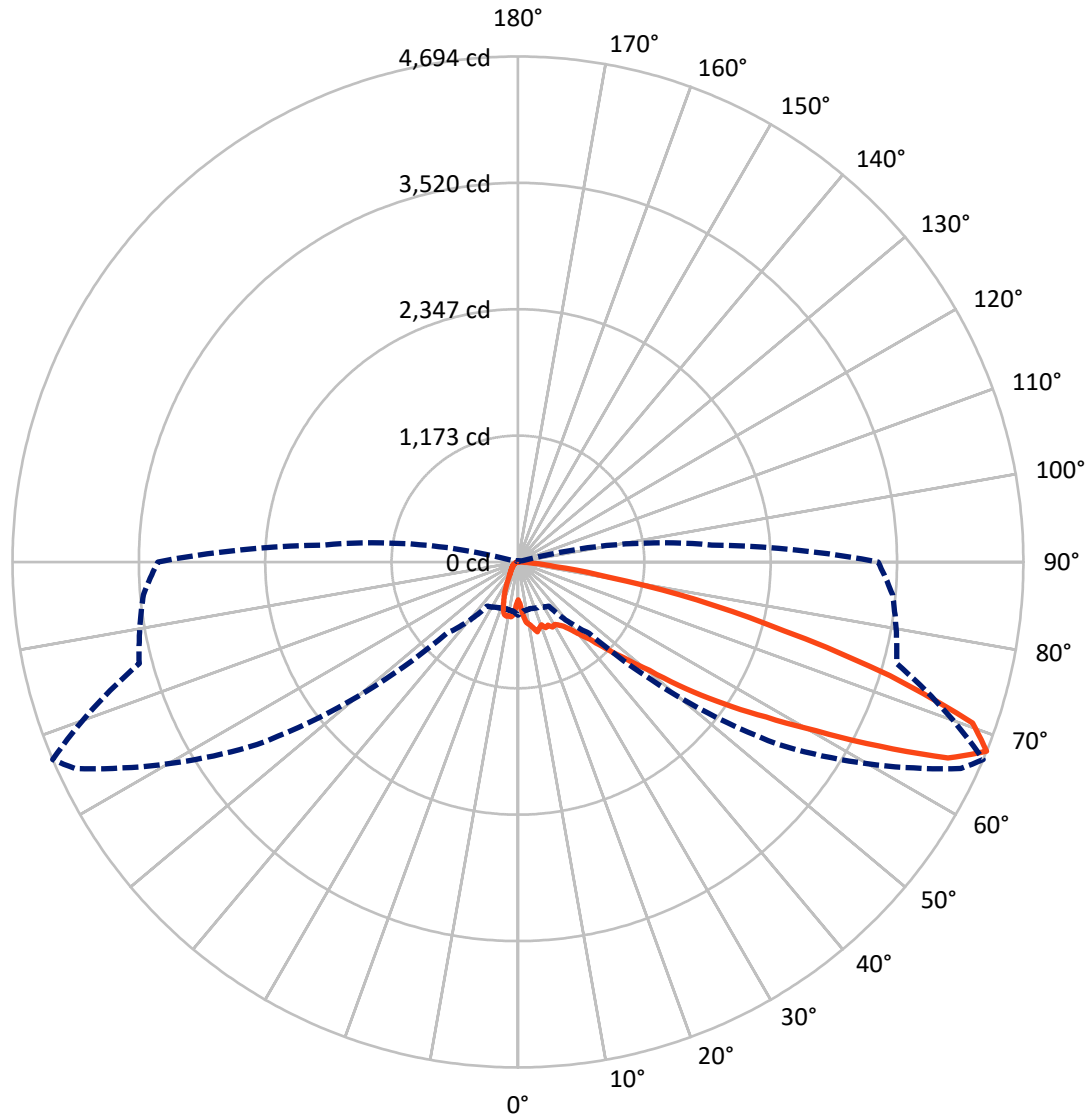
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 1.1 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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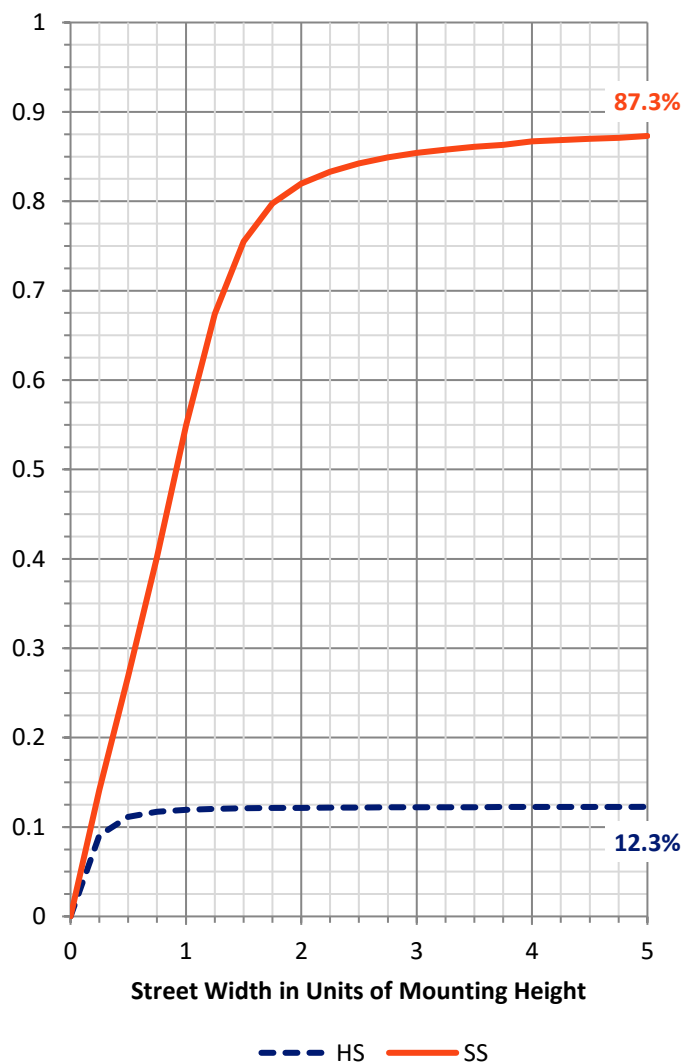
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 511.0    | 0.0    | 511.0  |
|                    | % Fixture | 12.4     | 0.0    | 12.4   |
| <b>Street Side</b> | Lumens    | 3621.0   | 0.0    | 3621.0 |
|                    | % Fixture | 87.6     | 0.0    | 87.6   |
| <b>Total</b>       | Lumens    | 4132.0   | 0.0    | 4132.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 44.2   | 1.1       |
| 10°-20°   | 130.7  | 3.2       |
| 20°-30°   | 204.8  | 5.0       |
| 30°-40°   | 330.3  | 8.0       |
| 40°-50°   | 606.9  | 14.7      |
| 50°-60°   | 1025.0 | 24.8      |
| 60°-70°   | 1133.2 | 27.4      |
| 70°-80°   | 593.1  | 14.4      |
| 80°-90°   | 63.7   | 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°    | 4132.0 | 100.0     |
| 0°-180°   | 4132.0 | 100.0     |

**Coefficient of Utilization**

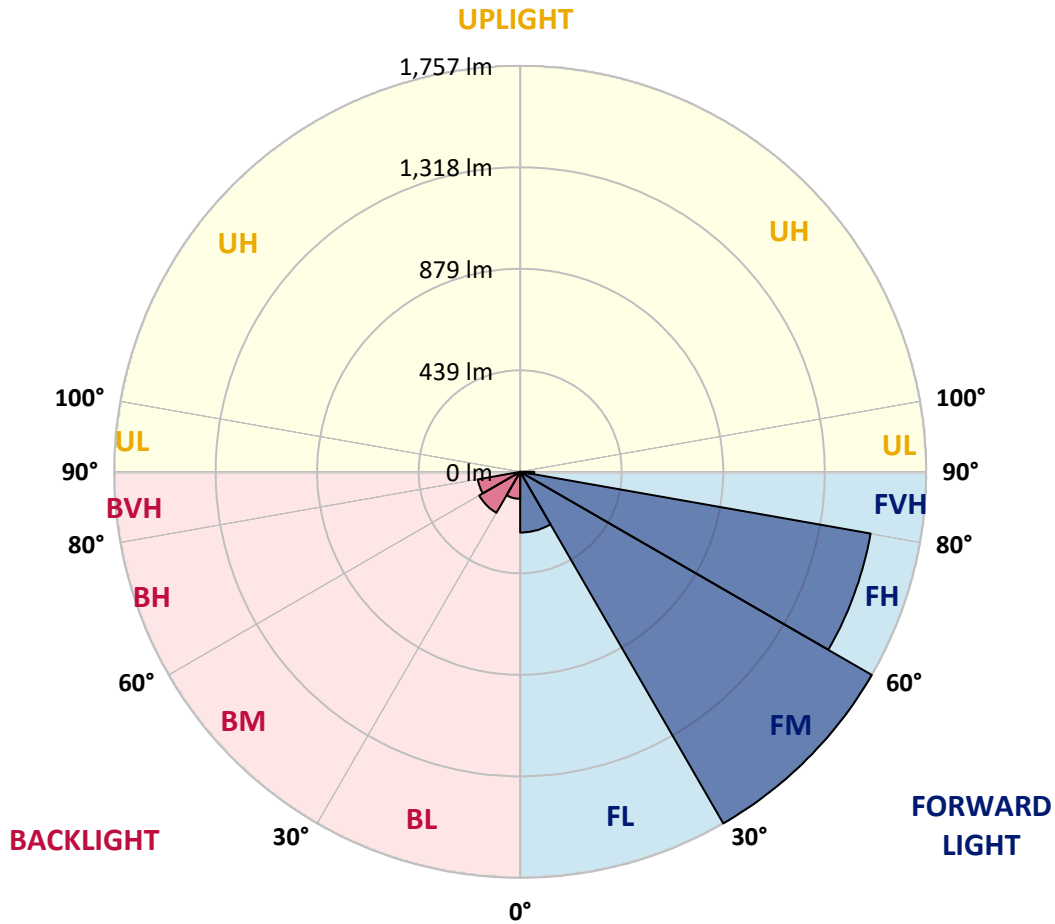


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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone           | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|----------------|--------|-----------|-------------------------|------|---------|
|                |        |           | B                       | U    | G       |
| FL (0°-30°)    | 262.7  | 6.4       |                         |      |         |
| FM (30°-60°)   | 1757.4 | 42.5      |                         |      |         |
| FH (60°-80°)   | 1539.9 | 37.3      |                         |      | G1/1800 |
| FVH (80°-90°)  | 61.0   | 1.5       |                         |      | G1/100  |
| BL (0°-30°)    | 117.0  | 2.8       | B1/500                  |      |         |
| BM (30°-60°)   | 204.9  | 5.0       | B0/220                  |      |         |
| BH (60°-80°)   | 186.4  | 4.5       | B1/500                  |      | G1/500  |
| BVH (80°-90°)  | 2.7    | 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-G1**  
 Type II Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 65°    | 67°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 351.9  | 351.9  | 351.9  | 351.9  | 351.9  | 351.9  | 351.9  | 351.9  | 351.9  | 351.9  | 351.9  |
| 2.5°  | 415.4  | 401.4  | 377.5  | 384.4  | 398.3  | 409.8  | 404.3  | 393.6  | 393.9  | 383.0  | 422.1  |
| 5°    | 483.4  | 464.5  | 450.7  | 455.5  | 454.8  | 454.4  | 480.2  | 490.1  | 494.3  | 512.3  | 538.9  |
| 7.5°  | 502.8  | 496.1  | 481.7  | 486.1  | 471.6  | 472.7  | 517.9  | 560.7  | 567.4  | 578.5  | 625.9  |
| 10°   | 495.3  | 482.3  | 487.5  | 487.5  | 487.8  | 511.2  | 541.6  | 582.5  | 590.7  | 633.4  | 638.5  |
| 12.5° | 487.1  | 487.8  | 508.5  | 504.7  | 533.2  | 575.4  | 585.6  | 631.5  | 627.6  | 664.7  | 719.8  |
| 15°   | 517.5  | 533.5  | 520.0  | 525.3  | 528.0  | 577.5  | 594.0  | 655.0  | 672.6  | 719.6  | 755.4  |
| 17.5° | 569.7  | 571.8  | 543.9  | 536.4  | 556.1  | 570.1  | 603.5  | 632.8  | 644.5  | 767.8  | 818.5  |
| 20°   | 579.1  | 592.6  | 564.3  | 520.7  | 562.4  | 581.7  | 604.9  | 619.0  | 624.0  | 782.7  | 854.1  |
| 22.5° | 635.9  | 621.1  | 575.8  | 542.7  | 554.6  | 575.6  | 590.0  | 632.4  | 662.6  | 754.6  | 888.3  |
| 25°   | 665.1  | 661.1  | 617.9  | 589.6  | 577.5  | 575.8  | 608.9  | 641.0  | 650.6  | 783.7  | 896.7  |
| 27.5° | 734.9  | 725.9  | 642.2  | 638.7  | 598.6  | 563.4  | 609.5  | 667.2  | 685.2  | 756.3  | 928.1  |
| 30°   | 829.8  | 826.5  | 715.2  | 712.9  | 649.2  | 585.9  | 643.5  | 683.3  | 672.4  | 770.3  | 949.1  |
| 32.5° | 925.4  | 952.7  | 838.8  | 773.9  | 726.1  | 668.2  | 633.9  | 678.3  | 697.8  | 804.5  | 987.7  |
| 35°   | 1040.9 | 1060.6 | 944.7  | 897.5  | 791.3  | 706.8  | 697.8  | 726.3  | 734.7  | 845.1  | 1031.5 |
| 37.5° | 1243.0 | 1213.2 | 1114.5 | 1034.2 | 978.4  | 844.5  | 800.1  | 777.4  | 796.9  | 900.3  | 1121.0 |
| 40°   | 1392.2 | 1373.3 | 1251.8 | 1203.8 | 1075.5 | 997.1  | 881.0  | 859.8  | 881.6  | 956.9  | 1183.2 |
| 42.5° | 1572.3 | 1533.1 | 1418.6 | 1386.1 | 1254.1 | 1103.0 | 985.2  | 992.5  | 978.9  | 1068.6 | 1292.4 |
| 45°   | 1735.1 | 1646.7 | 1583.0 | 1590.3 | 1519.9 | 1315.7 | 1158.9 | 1155.4 | 1144.0 | 1230.4 | 1407.3 |
| 47.5° | 1844.8 | 1767.4 | 1705.4 | 1685.0 | 1676.6 | 1689.9 | 1410.0 | 1346.7 | 1338.3 | 1400.4 | 1588.2 |
| 50°   | 1903.7 | 1819.0 | 1742.3 | 1746.4 | 1916.6 | 2044.7 | 1669.1 | 1579.2 | 1582.3 | 1647.1 | 1835.5 |
| 52.5° | 1864.0 | 1768.2 | 1687.3 | 1765.9 | 2102.8 | 2281.4 | 2098.0 | 1882.9 | 1955.8 | 1939.3 | 2167.3 |
| 55°   | 1681.0 | 1597.8 | 1540.4 | 1681.0 | 2123.1 | 2536.0 | 2626.0 | 2340.1 | 2323.7 | 2286.0 | 2505.6 |
| 57.5° | 1373.1 | 1301.5 | 1266.0 | 1414.4 | 1900.7 | 2741.2 | 3156.3 | 2856.7 | 2717.3 | 2559.3 | 2786.5 |
| 60°   | 1023.1 | 970.3  | 933.4  | 1011.8 | 1497.6 | 2541.9 | 3503.6 | 3343.7 | 3182.3 | 2822.8 | 3038.9 |
| 62.5° | 757.7  | 714.8  | 675.6  | 682.7  | 1031.3 | 2186.2 | 3636.9 | 3859.5 | 3766.9 | 3100.9 | 3277.0 |
| 65°   | 604.7  | 565.5  | 538.1  | 522.3  | 638.7  | 1644.8 | 3451.4 | 4282.3 | 4389.2 | 3362.9 | 3448.9 |
| 67.5° | 493.8  | 460.7  | 447.1  | 465.1  | 501.0  | 937.6  | 2955.9 | 4538.8 | 4693.9 | 3640.9 | 3491.2 |
| 70°   | 401.8  | 374.6  | 373.1  | 421.7  | 461.3  | 571.6  | 2174.3 | 4361.7 | 4478.5 | 3688.2 | 3237.4 |
| 72.5° | 280.0  | 268.1  | 287.2  | 356.1  | 457.2  | 476.0  | 1248.6 | 3609.4 | 3613.6 | 3257.5 | 2662.8 |
| 75°   | 158.5  | 156.6  | 186.8  | 284.0  | 445.2  | 471.2  | 696.1  | 2550.7 | 2552.6 | 2463.7 | 1844.8 |
| 77.5° | 87.2   | 81.5   | 108.8  | 192.0  | 382.3  | 460.3  | 449.0  | 1741.6 | 1697.0 | 1371.0 | 842.6  |
| 80°   | 40.2   | 37.9   | 58.9   | 123.0  | 279.6  | 435.4  | 359.9  | 957.3  | 863.2  | 446.7  | 205.6  |
| 82.5° | 16.6   | 15.7   | 27.0   | 79.0   | 176.7  | 350.7  | 303.3  | 424.7  | 340.8  | 84.9   | 63.5   |
| 85°   | 2.9    | 3.1    | 11.1   | 47.8   | 98.9   | 161.6  | 245.9  | 201.6  | 148.2  | 23.5   | 34.8   |
| 87.5° | 0.0    | 0.0    | 2.3    | 11.5   | 23.9   | 44.2   | 99.8   | 56.4   | 38.8   | 6.9    | 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°    | 351.9  | 351.9  | 351.9 | 351.9 | 351.9 | 351.9 | 351.9 | 351.9 | 351.9 | 351.9 | 351.9 |
| 2.5°  | 429.9  | 426.3  | 390.3 | 392.0 | 394.5 | 392.2 | 391.8 | 381.7 | 372.5 | 402.9 | 402.4 |
| 5°    | 543.7  | 518.4  | 493.4 | 483.8 | 463.0 | 435.8 | 436.0 | 427.4 | 418.6 | 431.0 | 431.0 |
| 7.5°  | 624.8  | 589.8  | 558.2 | 501.8 | 446.9 | 397.2 | 392.8 | 381.1 | 367.7 | 383.8 | 386.9 |
| 10°   | 643.7  | 613.3  | 572.4 | 489.6 | 437.7 | 389.2 | 336.0 | 292.2 | 271.9 | 262.4 | 260.8 |
| 12.5° | 701.8  | 679.1  | 587.7 | 496.1 | 421.3 | 339.4 | 252.2 | 200.2 | 164.8 | 162.0 | 158.3 |
| 15°   | 740.5  | 724.6  | 602.8 | 480.0 | 352.1 | 244.0 | 158.5 | 121.6 | 107.3 | 106.1 | 104.2 |
| 17.5° | 800.7  | 773.0  | 588.4 | 428.6 | 275.4 | 161.0 | 106.5 | 96.0  | 97.7  | 101.4 | 98.5  |
| 20°   | 825.2  | 771.1  | 556.9 | 354.2 | 193.5 | 107.9 | 92.4  | 86.8  | 91.2  | 94.7  | 93.1  |
| 22.5° | 850.4  | 776.6  | 529.0 | 292.0 | 126.4 | 89.3  | 82.4  | 79.4  | 79.9  | 83.4  | 83.6  |
| 25°   | 850.2  | 791.7  | 496.8 | 227.4 | 94.1  | 79.4  | 74.4  | 70.6  | 69.2  | 71.7  | 71.1  |
| 27.5° | 891.5  | 774.3  | 437.9 | 168.7 | 82.8  | 71.1  | 66.2  | 61.6  | 56.4  | 58.9  | 58.9  |
| 30°   | 891.7  | 802.6  | 396.8 | 121.2 | 75.9  | 63.3  | 59.1  | 52.0  | 45.9  | 48.0  | 48.2  |
| 32.5° | 915.4  | 778.1  | 358.8 | 92.6  | 70.4  | 58.7  | 49.5  | 43.0  | 39.4  | 40.7  | 40.7  |
| 35°   | 942.4  | 799.0  | 300.6 | 81.7  | 65.0  | 52.2  | 42.3  | 37.1  | 34.4  | 35.4  | 35.4  |
| 37.5° | 1031.7 | 794.6  | 260.1 | 76.1  | 61.4  | 47.2  | 38.6  | 32.7  | 31.4  | 32.1  | 32.9  |
| 40°   | 1064.0 | 825.9  | 205.2 | 72.7  | 55.5  | 42.6  | 34.0  | 29.6  | 27.9  | 28.3  | 28.5  |
| 42.5° | 1146.1 | 832.8  | 163.9 | 70.0  | 50.3  | 36.9  | 30.2  | 27.0  | 24.9  | 24.9  | 25.6  |
| 45°   | 1236.9 | 850.2  | 130.4 | 67.7  | 45.9  | 33.1  | 27.2  | 24.7  | 21.6  | 21.2  | 22.0  |
| 47.5° | 1368.3 | 916.8  | 106.3 | 63.1  | 40.7  | 30.8  | 25.2  | 21.4  | 18.9  | 18.0  | 18.9  |
| 50°   | 1588.2 | 1030.0 | 93.9  | 57.4  | 36.9  | 28.9  | 22.2  | 18.2  | 16.3  | 15.3  | 15.9  |
| 52.5° | 1898.4 | 1225.6 | 87.4  | 52.2  | 33.5  | 26.0  | 19.9  | 15.9  | 14.0  | 13.2  | 13.6  |
| 55°   | 2243.0 | 1449.9 | 84.3  | 47.0  | 30.6  | 22.8  | 17.4  | 14.0  | 12.4  | 11.3  | 11.5  |
| 57.5° | 2561.6 | 1660.7 | 81.1  | 41.9  | 27.7  | 20.3  | 15.3  | 12.4  | 10.7  | 9.6   | 9.9   |
| 60°   | 2875.6 | 1829.0 | 73.6  | 36.1  | 24.9  | 18.2  | 13.4  | 10.7  | 9.6   | 8.4   | 8.4   |
| 62.5° | 3153.3 | 1929.6 | 62.7  | 31.2  | 22.4  | 16.1  | 11.9  | 9.6   | 8.8   | 7.5   | 7.5   |
| 65°   | 3342.4 | 1934.3 | 50.5  | 26.8  | 19.7  | 13.8  | 10.5  | 9.0   | 8.2   | 6.7   | 6.5   |
| 67.5° | 3345.1 | 1808.5 | 40.5  | 23.9  | 17.4  | 12.2  | 9.4   | 8.6   | 7.5   | 6.3   | 5.9   |
| 70°   | 2994.0 | 1494.1 | 33.7  | 21.0  | 15.1  | 10.7  | 8.2   | 8.2   | 7.3   | 6.1   | 5.4   |
| 72.5° | 2395.0 | 1141.7 | 28.3  | 18.2  | 13.4  | 9.2   | 7.5   | 7.8   | 7.1   | 6.1   | 5.4   |
| 75°   | 1609.8 | 654.8  | 23.5  | 15.5  | 11.7  | 7.8   | 7.3   | 7.5   | 7.3   | 6.1   | 5.2   |
| 77.5° | 741.4  | 208.6  | 18.2  | 12.8  | 10.1  | 6.5   | 7.1   | 7.1   | 6.7   | 5.4   | 4.6   |
| 80°   | 167.1  | 51.4   | 13.2  | 9.4   | 8.2   | 4.8   | 6.5   | 5.9   | 5.2   | 3.8   | 2.7   |
| 82.5° | 60.8   | 15.7   | 8.0   | 5.9   | 5.0   | 1.9   | 4.2   | 4.2   | 3.8   | 2.7   | 1.7   |
| 85°   | 34.8   | 8.2    | 4.4   | 3.8   | 2.7   | 0.8   | 2.3   | 2.5   | 2.1   | 1.9   | 0.8   |
| 87.5° | 11.3   | 1.9    | 2.1   | 2.3   | 2.1   | 0.4   | 0.8   | 0.8   | 0.6   | 0.4   | 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)