

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: P596504

Luminaire Tested: **MSA-SA1B-827-U-SL3**

Issue Date: 5/27/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P596504  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-18)  
Test Lab: INNOVATIONS CENTER  
Issue Date: 5/27/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: INVUE  
Catalog Number: MSA-SA1B-827-U-SL3  
Description: MESA POST TOP DECORATIVE LUMINAIRE. (1) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III SPILL LIGHT ELIMINATOR OPTICS.  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

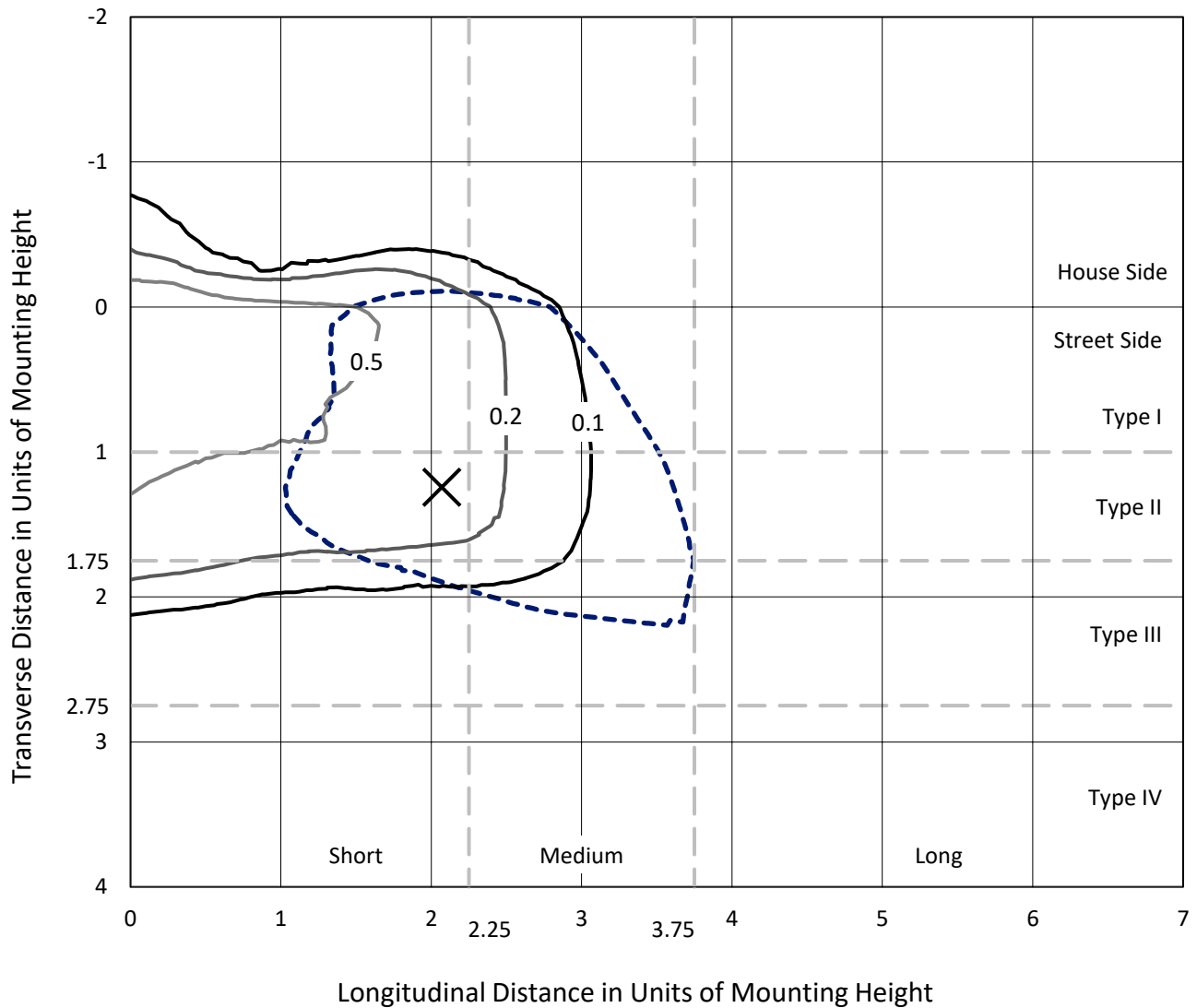
Lumens per Lamp: N/A  
Luminaire Lumens: 3653 lumens  
Efficiency: N/A  
Efficacy: 83.0 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
IES Classification: Type III - Short  
BUG Rating: B1 - U0 - G1  
  
Input Watts (W): 44  
Input Voltage (V): NR  
Input Current (Ain): NR  
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

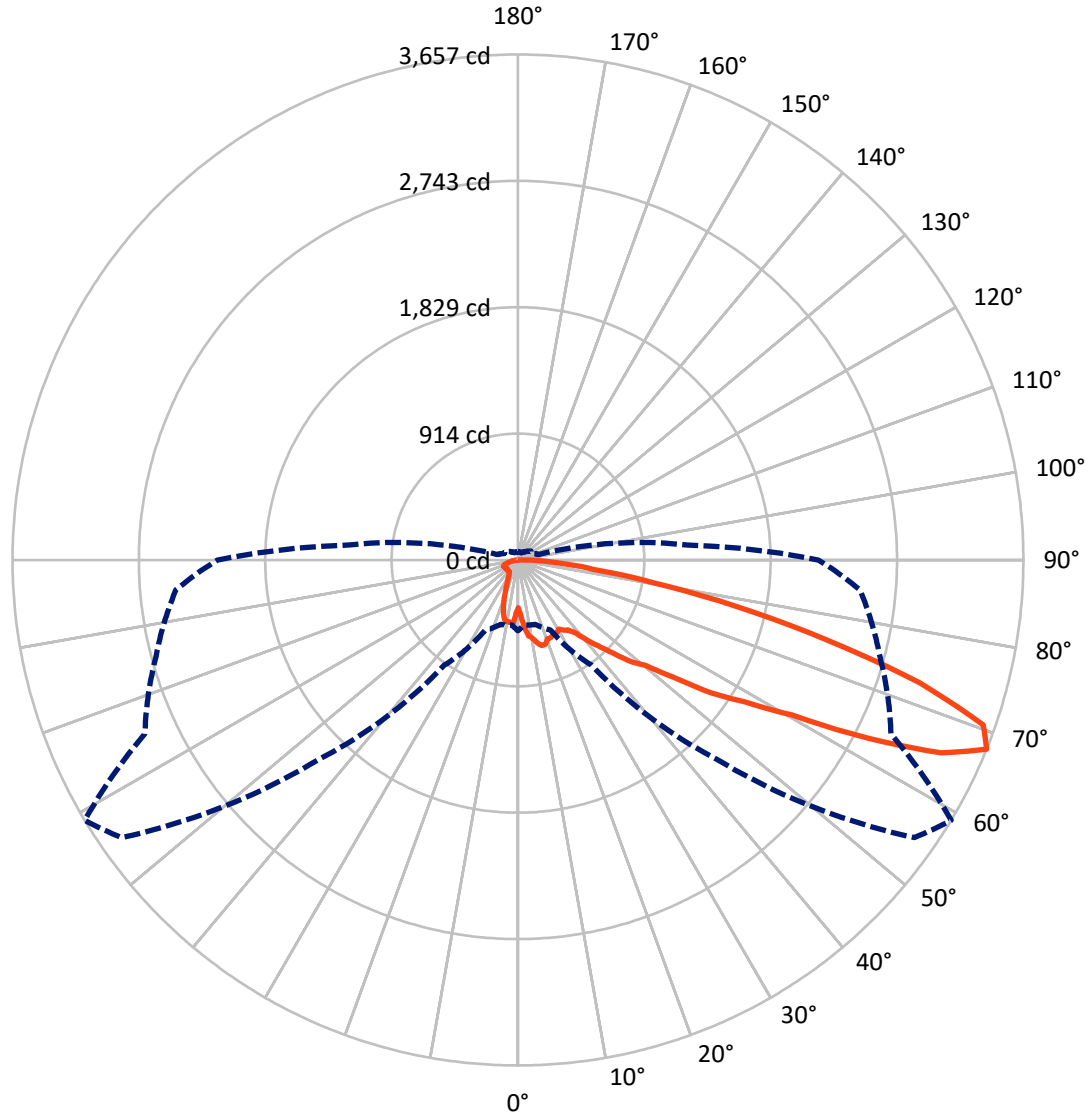
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 0.9 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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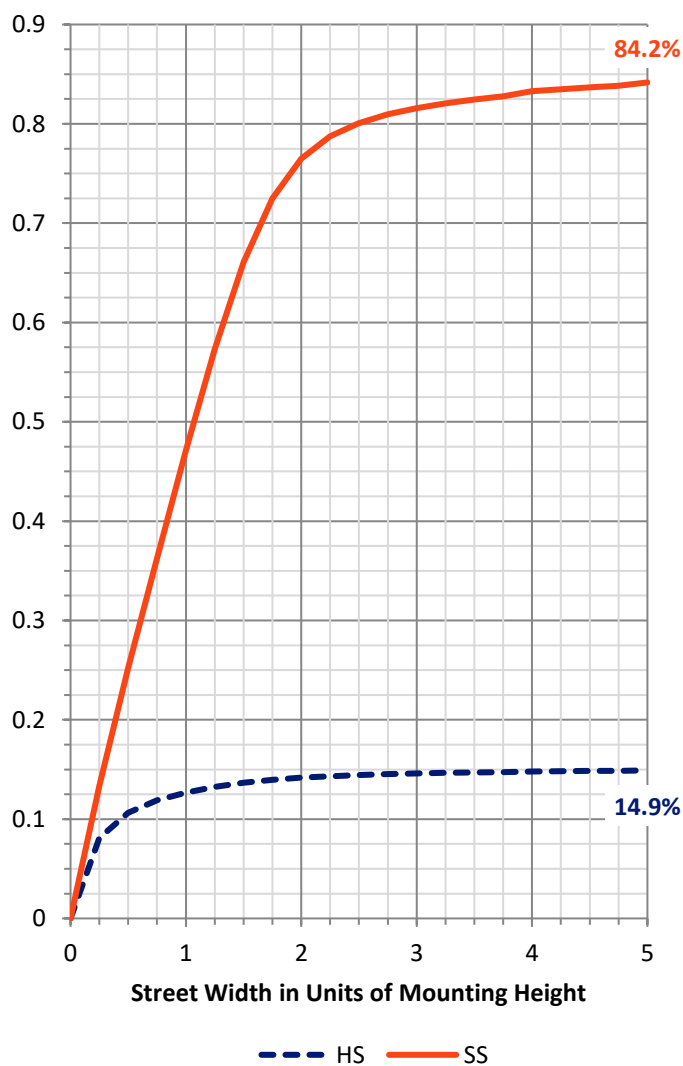
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 549.8    | 0.0    | 549.8  |
|                    | % Fixture | 15.1     | 0.0    | 15.1   |
| <b>Street Side</b> | Lumens    | 3103.1   | 0.0    | 3103.1 |
|                    | % Fixture | 84.9     | 0.0    | 84.9   |
| <b>Total</b>       | Lumens    | 3653.0   | 0.0    | 3653.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 45.1   | 1.2       |
| 10°-20°   | 133.6  | 3.7       |
| 20°-30°   | 190.8  | 5.2       |
| 30°-40°   | 281.1  | 7.7       |
| 40°-50°   | 475.0  | 13.0      |
| 50°-60°   | 826.6  | 22.6      |
| 60°-70°   | 1053.3 | 28.8      |
| 70°-80°   | 557.7  | 15.3      |
| 80°-90°   | 89.7   | 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°    | 3653.0 | 100.0     |
| 0°-180°   | 3653.0 | 100.0     |

**Coefficient of Utilization**



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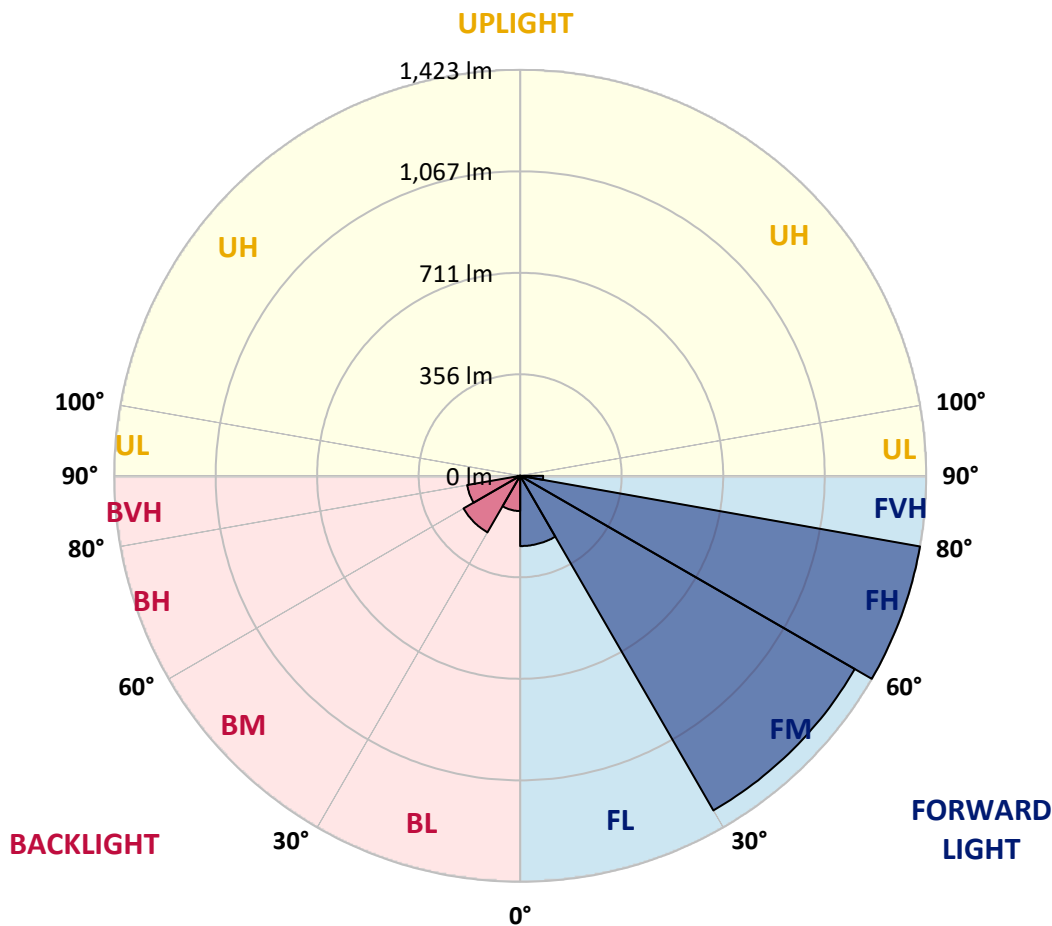
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone           | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|----------------|--------|-----------|-------------------------|------|---------|
|                |        |           | B                       | U    | G       |
| FL (0°-30°)    | 246.2  | 6.7       |                         |      |         |
| FM (30°-60°)   | 1353.7 | 37.1      |                         |      |         |
| FH (60°-80°)   | 1422.6 | 38.9      |                         |      | G1/1800 |
| FVH (80°-90°)  | 80.6   | 2.2       |                         |      | G1/100  |
| BL (0°-30°)    | 123.3  | 3.4       | B1/500                  |      |         |
| BM (30°-60°)   | 229.0  | 6.3       | B1/1000                 |      |         |
| BH (60°-80°)   | 188.5  | 5.2       | B1/500                  |      | G1/500  |
| BVH (80°-90°)  | 9.1    | 0.2       |                         |      | 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 III Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 59°    | 65°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 345.7  | 345.7  | 345.7  | 345.7  | 345.7  | 345.7  | 345.7  | 345.7  | 345.7  | 345.7  | 345.7  |
| 2.5°  | 431.6  | 411.5  | 390.1  | 396.1  | 408.4  | 413.9  | 407.9  | 402.0  | 394.4  | 385.5  | 416.1  |
| 5°    | 523.4  | 493.5  | 489.2  | 489.0  | 484.7  | 467.3  | 489.6  | 488.1  | 497.1  | 506.4  | 530.2  |
| 7.5°  | 549.5  | 538.4  | 526.3  | 532.1  | 510.2  | 509.3  | 544.0  | 553.9  | 571.2  | 565.5  | 597.5  |
| 10°   | 536.1  | 523.5  | 529.9  | 527.6  | 529.6  | 552.5  | 573.7  | 574.3  | 592.9  | 611.2  | 590.6  |
| 12.5° | 512.4  | 513.3  | 538.6  | 537.6  | 570.1  | 612.7  | 619.0  | 614.1  | 644.4  | 632.1  | 649.7  |
| 15°   | 529.3  | 540.6  | 534.2  | 539.6  | 552.5  | 606.7  | 624.3  | 642.3  | 671.1  | 682.2  | 664.6  |
| 17.5° | 556.2  | 562.2  | 533.8  | 530.8  | 557.3  | 583.0  | 626.8  | 642.1  | 646.6  | 726.0  | 701.1  |
| 20°   | 544.7  | 557.0  | 529.1  | 493.4  | 537.3  | 571.4  | 614.6  | 609.9  | 631.7  | 729.4  | 708.7  |
| 22.5° | 577.3  | 557.0  | 521.5  | 496.1  | 511.6  | 542.9  | 579.6  | 610.1  | 635.9  | 709.5  | 719.7  |
| 25°   | 583.4  | 573.8  | 540.7  | 515.5  | 510.2  | 521.4  | 573.7  | 593.7  | 637.3  | 736.7  | 713.8  |
| 27.5° | 621.2  | 606.8  | 539.3  | 540.1  | 513.9  | 494.3  | 555.1  | 597.1  | 653.1  | 719.8  | 728.2  |
| 30°   | 668.1  | 657.1  | 572.5  | 575.5  | 539.3  | 503.1  | 567.8  | 580.5  | 662.2  | 746.1  | 746.3  |
| 32.5° | 703.3  | 722.6  | 637.6  | 595.5  | 582.7  | 555.6  | 548.3  | 605.4  | 651.6  | 793.8  | 777.3  |
| 35°   | 766.6  | 781.6  | 687.8  | 654.0  | 610.5  | 580.0  | 601.2  | 621.8  | 696.0  | 856.5  | 823.2  |
| 37.5° | 883.8  | 866.4  | 781.0  | 727.9  | 711.6  | 667.7  | 679.4  | 665.0  | 744.3  | 926.9  | 913.3  |
| 40°   | 951.6  | 936.5  | 846.6  | 817.2  | 752.8  | 758.4  | 743.7  | 754.2  | 808.8  | 1001.9 | 997.5  |
| 42.5° | 1018.4 | 998.3  | 922.3  | 901.9  | 837.6  | 810.4  | 813.0  | 847.1  | 908.4  | 1122.9 | 1108.5 |
| 45°   | 1084.5 | 1033.0 | 999.7  | 1005.1 | 974.2  | 918.3  | 922.1  | 954.2  | 1017.0 | 1261.3 | 1228.2 |
| 47.5° | 1135.2 | 1092.6 | 1066.6 | 1059.9 | 1044.6 | 1119.4 | 1085.9 | 1098.9 | 1126.6 | 1384.5 | 1372.0 |
| 50°   | 1231.0 | 1181.3 | 1147.4 | 1137.8 | 1189.8 | 1293.8 | 1225.7 | 1197.7 | 1256.7 | 1543.8 | 1537.3 |
| 52.5° | 1384.4 | 1322.5 | 1266.0 | 1265.3 | 1340.6 | 1408.1 | 1456.1 | 1407.8 | 1429.4 | 1707.0 | 1725.6 |
| 55°   | 1518.3 | 1446.6 | 1395.8 | 1423.9 | 1531.0 | 1572.3 | 1735.3 | 1697.5 | 1679.3 | 1871.7 | 1924.8 |
| 57.5° | 1568.3 | 1484.5 | 1451.4 | 1492.7 | 1650.6 | 1863.0 | 2035.3 | 1935.9 | 1918.1 | 2058.1 | 2169.4 |
| 60°   | 1458.5 | 1370.0 | 1372.0 | 1449.9 | 1723.4 | 2076.5 | 2363.3 | 2279.0 | 2174.6 | 2290.1 | 2398.8 |
| 62.5° | 1145.8 | 1065.8 | 1118.0 | 1236.4 | 1662.4 | 2283.9 | 2803.0 | 2838.6 | 2467.7 | 2482.5 | 2526.0 |
| 65°   | 778.8  | 723.4  | 770.4  | 886.4  | 1348.3 | 2397.1 | 3221.7 | 3364.4 | 2734.6 | 2608.5 | 2581.0 |
| 67.5° | 512.5  | 473.4  | 482.5  | 559.6  | 928.2  | 2043.5 | 3501.7 | 3657.3 | 2978.5 | 2712.0 | 2484.1 |
| 70°   | 396.9  | 365.3  | 361.3  | 401.7  | 550.5  | 1419.7 | 3335.8 | 3572.3 | 3127.1 | 2615.0 | 2165.2 |
| 72.5° | 311.5  | 287.5  | 289.6  | 328.5  | 426.3  | 787.6  | 2581.3 | 3037.8 | 2903.3 | 2255.3 | 1663.5 |
| 75°   | 242.9  | 223.2  | 234.2  | 278.6  | 394.3  | 489.5  | 1781.0 | 2305.6 | 2244.6 | 1670.0 | 948.8  |
| 77.5° | 176.3  | 163.6  | 179.3  | 237.3  | 370.6  | 420.0  | 1108.7 | 1608.5 | 1437.9 | 857.4  | 325.5  |
| 80°   | 115.6  | 108.5  | 121.4  | 193.5  | 336.1  | 404.2  | 685.1  | 985.6  | 710.5  | 240.9  | 123.2  |
| 82.5° | 68.1   | 65.0   | 75.7   | 131.0  | 270.1  | 378.8  | 457.0  | 547.7  | 290.7  | 101.9  | 65.5   |
| 85°   | 35.8   | 33.4   | 44.9   | 75.2   | 186.2  | 345.8  | 359.8  | 327.9  | 140.4  | 44.3   | 31.3   |
| 87.5° | 11.9   | 11.6   | 19.0   | 29.1   | 70.4   | 183.6  | 192.0  | 155.7  | 57.9   | 12.8   | 6.8    |
| 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°    | 345.7  | 345.7  | 345.7 | 345.7 | 345.7 | 345.7 | 345.7 | 345.7 | 345.7 | 345.7 | 345.7 |
| 2.5°  | 420.3  | 414.1  | 378.5 | 383.4 | 388.1 | 385.8 | 384.4 | 368.3 | 366.7 | 389.6 | 387.8 |
| 5°    | 529.6  | 503.9  | 473.5 | 472.1 | 452.2 | 431.7 | 435.8 | 429.3 | 431.1 | 440.6 | 441.5 |
| 7.5°  | 587.3  | 555.3  | 526.3 | 479.3 | 439.3 | 407.0 | 412.1 | 410.5 | 406.4 | 427.7 | 433.4 |
| 10°   | 586.2  | 557.7  | 525.1 | 468.1 | 441.2 | 414.9 | 383.3 | 353.4 | 344.6 | 334.1 | 335.0 |
| 12.5° | 624.9  | 599.7  | 528.5 | 470.4 | 433.9 | 388.5 | 329.4 | 296.8 | 265.5 | 264.9 | 257.0 |
| 15°   | 637.0  | 618.4  | 535.8 | 457.1 | 383.0 | 318.0 | 256.8 | 221.4 | 198.8 | 194.3 | 187.6 |
| 17.5° | 667.5  | 638.4  | 513.6 | 414.1 | 323.8 | 248.6 | 193.0 | 168.3 | 166.4 | 169.5 | 166.1 |
| 20°   | 669.5  | 622.3  | 473.7 | 350.5 | 260.2 | 188.4 | 157.4 | 145.0 | 151.7 | 159.3 | 159.0 |
| 22.5° | 667.8  | 602.0  | 439.2 | 296.3 | 195.5 | 151.4 | 137.9 | 135.1 | 141.3 | 152.6 | 154.0 |
| 25°   | 650.5  | 595.4  | 396.0 | 243.3 | 158.7 | 129.7 | 126.0 | 127.7 | 135.5 | 148.8 | 148.8 |
| 27.5° | 668.6  | 568.3  | 341.8 | 198.0 | 133.4 | 115.5 | 118.1 | 122.4 | 128.2 | 143.3 | 146.1 |
| 30°   | 662.7  | 577.3  | 298.1 | 159.4 | 117.6 | 105.6 | 111.5 | 115.8 | 122.3 | 138.1 | 139.5 |
| 32.5° | 678.5  | 553.3  | 261.5 | 134.1 | 107.3 | 101.7 | 103.1 | 109.0 | 117.5 | 129.9 | 132.4 |
| 35°   | 702.6  | 562.1  | 219.4 | 120.6 | 102.2 | 97.2  | 99.8  | 104.5 | 113.0 | 125.1 | 127.1 |
| 37.5° | 779.7  | 561.6  | 190.3 | 113.2 | 101.2 | 96.3  | 97.5  | 100.8 | 110.7 | 121.7 | 126.3 |
| 40°   | 829.3  | 593.8  | 163.8 | 111.5 | 100.2 | 95.8  | 94.7  | 98.3  | 106.2 | 119.2 | 122.4 |
| 42.5° | 922.3  | 613.5  | 152.3 | 110.8 | 100.0 | 93.2  | 92.1  | 96.3  | 104.0 | 116.1 | 121.1 |
| 45°   | 1020.6 | 641.5  | 143.2 | 110.5 | 99.5  | 92.7  | 89.5  | 94.7  | 101.2 | 112.8 | 118.6 |
| 47.5° | 1136.2 | 700.8  | 138.1 | 109.4 | 98.6  | 93.3  | 88.5  | 91.2  | 98.5  | 110.1 | 115.8 |
| 50°   | 1287.6 | 779.3  | 139.2 | 107.9 | 100.0 | 93.5  | 87.2  | 88.4  | 95.0  | 106.3 | 112.2 |
| 52.5° | 1471.7 | 900.8  | 146.1 | 108.5 | 100.9 | 92.7  | 86.5  | 85.9  | 91.6  | 101.5 | 107.4 |
| 55°   | 1693.5 | 1073.2 | 167.0 | 111.5 | 100.9 | 92.6  | 85.6  | 82.8  | 87.2  | 95.2  | 100.9 |
| 57.5° | 1961.2 | 1272.9 | 207.9 | 112.8 | 100.2 | 91.6  | 83.6  | 78.6  | 81.3  | 87.9  | 93.3  |
| 60°   | 2191.0 | 1434.1 | 250.0 | 113.8 | 101.7 | 89.5  | 79.6  | 73.4  | 75.1  | 80.2  | 85.0  |
| 62.5° | 2308.2 | 1479.3 | 262.7 | 113.0 | 105.9 | 88.1  | 74.8  | 67.8  | 68.0  | 72.3  | 76.6  |
| 65°   | 2330.2 | 1419.1 | 211.8 | 112.2 | 111.3 | 87.9  | 71.4  | 63.0  | 61.9  | 65.0  | 68.7  |
| 67.5° | 2173.6 | 1231.7 | 152.8 | 110.5 | 111.9 | 87.0  | 69.0  | 59.1  | 56.3  | 58.5  | 61.6  |
| 70°   | 1845.5 | 992.0  | 128.3 | 107.1 | 104.5 | 82.4  | 65.0  | 55.1  | 51.4  | 52.9  | 55.3  |
| 72.5° | 1375.9 | 733.9  | 111.9 | 99.8  | 91.0  | 70.4  | 58.8  | 50.6  | 46.7  | 47.8  | 49.5  |
| 75°   | 764.4  | 391.5  | 93.7  | 86.8  | 74.3  | 57.0  | 50.2  | 44.9  | 41.5  | 42.0  | 43.8  |
| 77.5° | 253.9  | 144.4  | 68.7  | 68.9  | 56.2  | 44.0  | 41.3  | 38.4  | 35.8  | 35.9  | 37.5  |
| 80°   | 115.0  | 79.9   | 49.2  | 49.5  | 39.2  | 31.9  | 31.7  | 30.8  | 29.1  | 28.6  | 29.7  |
| 82.5° | 66.7   | 48.5   | 33.7  | 32.2  | 25.2  | 20.7  | 23.1  | 22.6  | 22.1  | 20.4  | 20.7  |
| 85°   | 32.8   | 26.0   | 17.6  | 16.7  | 13.9  | 10.4  | 12.4  | 12.8  | 12.4  | 10.5  | 10.4  |
| 87.5° | 8.0    | 8.5    | 4.3   | 4.0   | 2.3   | 1.1   | 1.9   | 1.9   | 2.3   | 1.5   | 0.8   |
| 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)