

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: P596880

Luminaire Tested: **MSA-SA1C-835-U-SL4**

Issue Date: 5/27/2021

Test Information

Test Method: LM-79-08
Report Number: P596880
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-20)
Test Lab: INNOVATIONS CENTER
Issue Date: 5/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: MSA-SA1C-835-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: 5037 lumens
Efficiency: N/A
Efficacy: 85.4 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

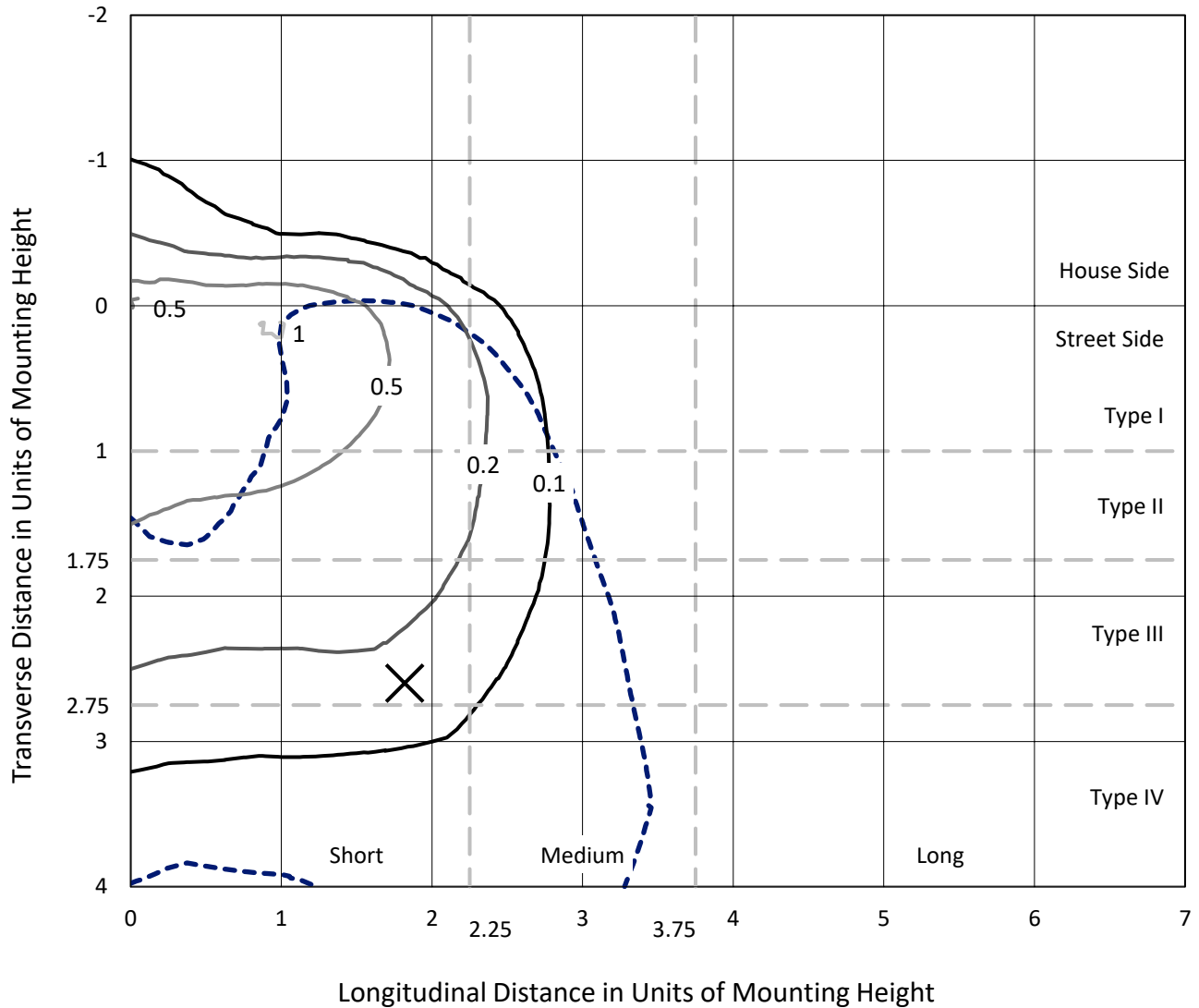
Input Watts (W): 59
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

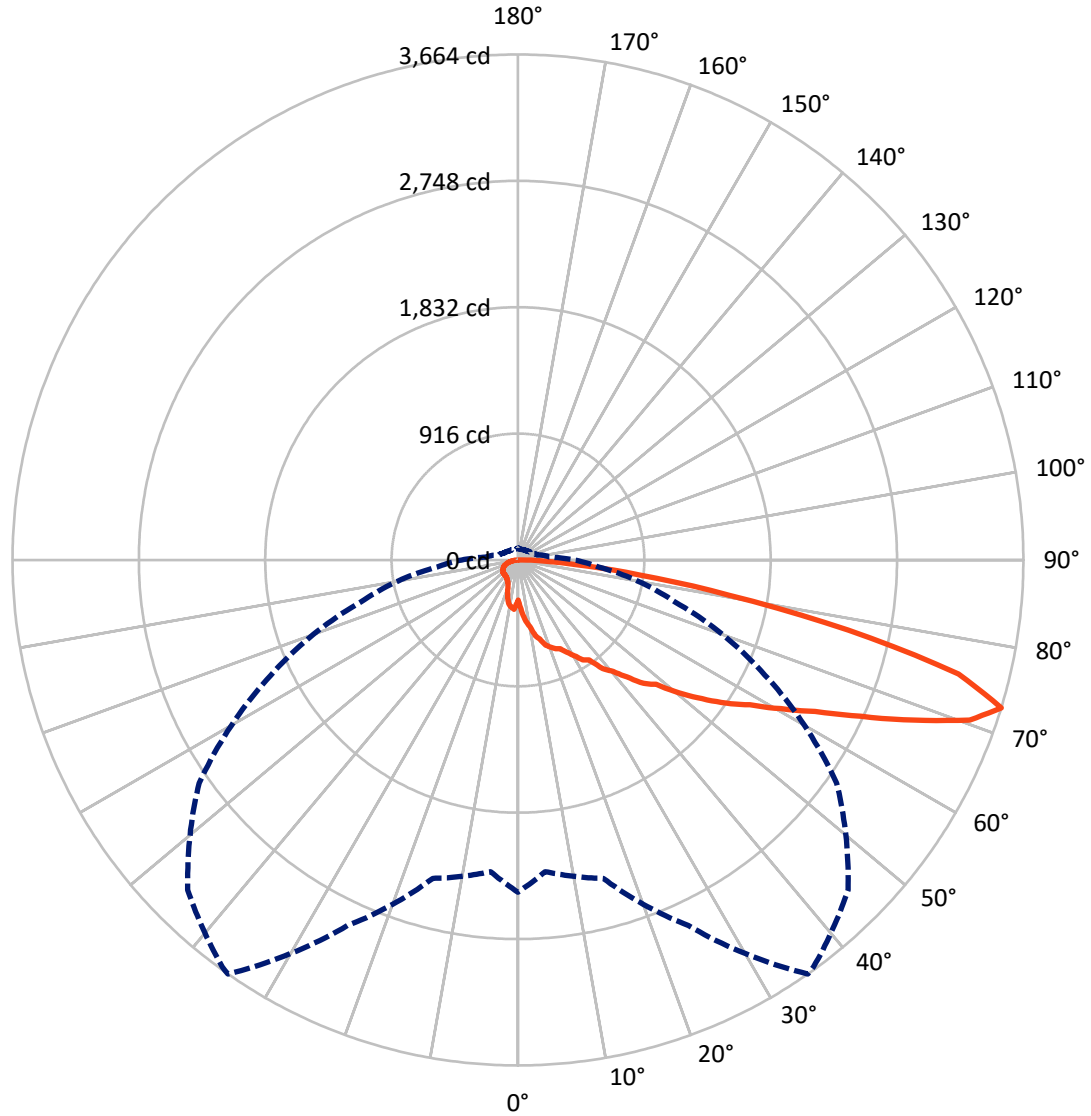
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 1 fc
 Type IV - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 35-Deg Lateral - - - Horizontal Cone Through 72.5-Deg Vertical

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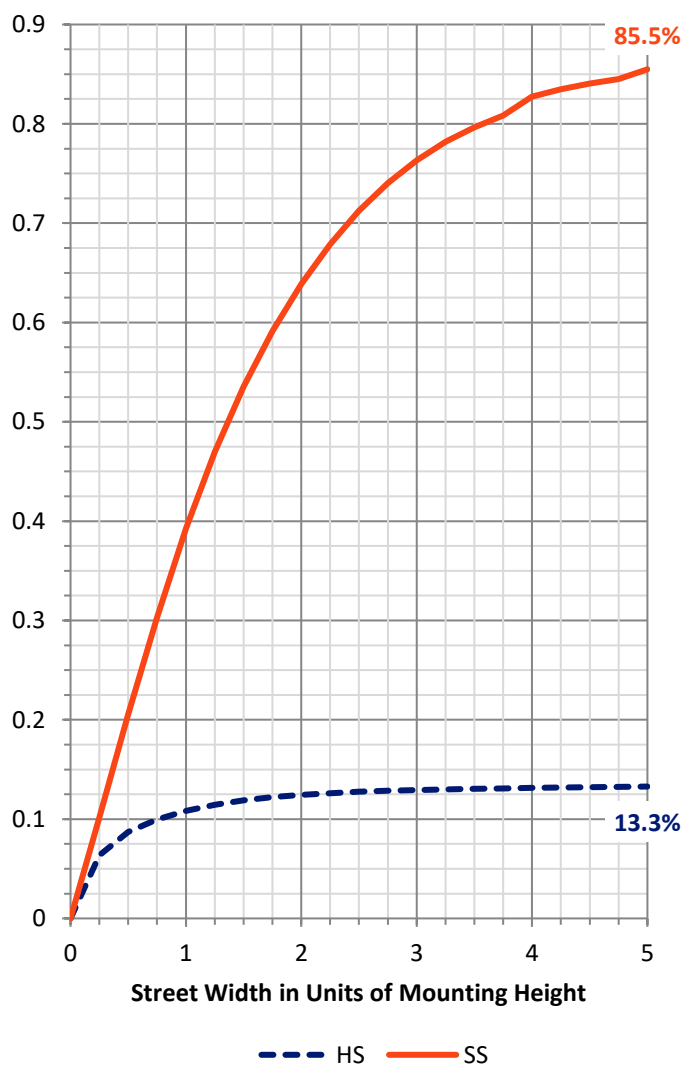
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 676.0 | 0.0 | 676.0 |
| | % Fixture | 13.4 | 0.0 | 13.4 |
| Street Side | Lumens | 4361.0 | 0.0 | 4361.0 |
| | % Fixture | 86.6 | 0.0 | 86.6 |
| Total | Lumens | 5037.0 | 0.0 | 5037.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 38.7 | 0.8 |
| 10°-20° | 136.3 | 2.7 |
| 20°-30° | 236.8 | 4.7 |
| 30°-40° | 395.8 | 7.9 |
| 40°-50° | 686.9 | 13.6 |
| 50°-60° | 1038.4 | 20.6 |
| 60°-70° | 1345.2 | 26.7 |
| 70°-80° | 992.6 | 19.7 |
| 80°-90° | 166.4 | 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° | 5037.0 | 100.0 |
| 0°-180° | 5037.0 | 100.0 |

Coefficient of Utilization



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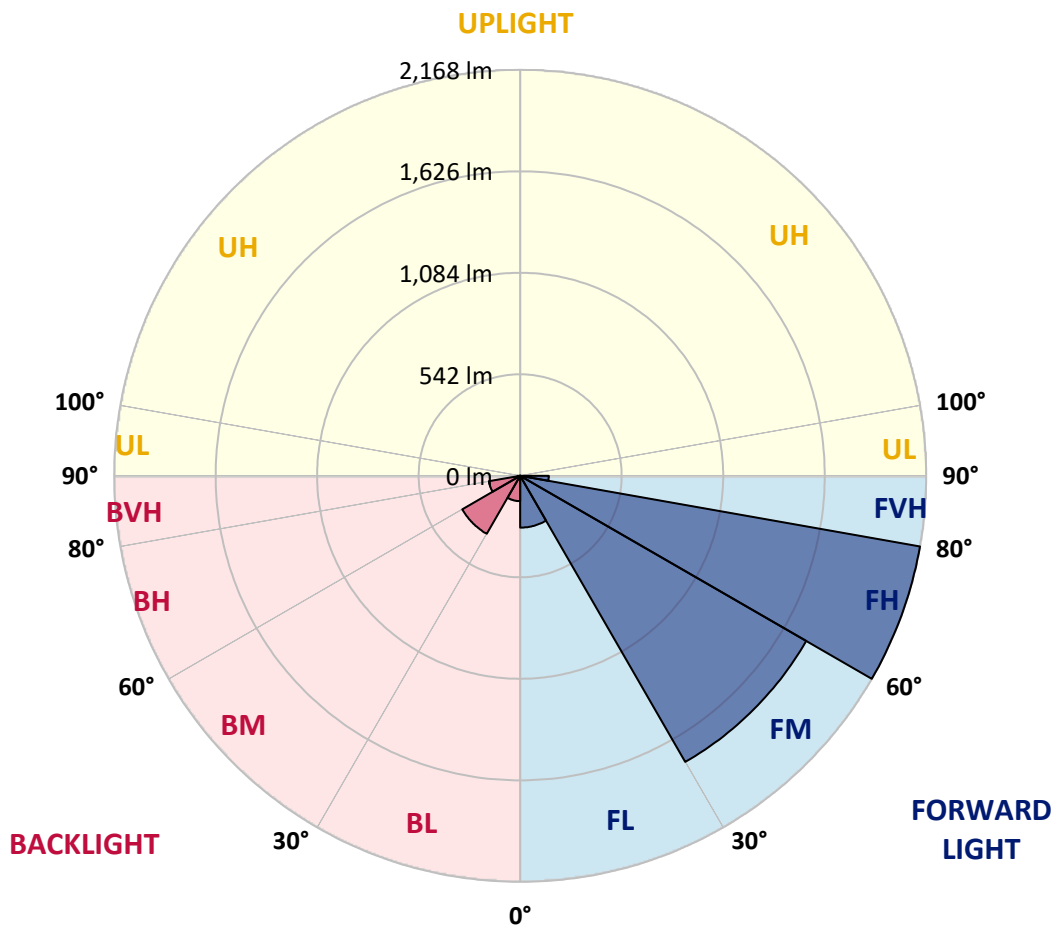
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 276.6 | 5.5 | | | |
| FM (30°-60°) | 1763.8 | 35.0 | | | |
| FH (60°-80°) | 2167.9 | 43.0 | | | G2/5000 |
| FVH (80°-90°) | 152.7 | 3.0 | | | G2/225 |
| BL (0°-30°) | 135.1 | 2.7 | B1/500 | | |
| BM (30°-60°) | 357.3 | 7.1 | B1/1000 | | |
| BH (60°-80°) | 170.0 | 3.4 | B1/500 | | G1/500 |
| BVH (80°-90°) | 13.6 | 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° | 291.1 | 291.1 | 291.1 | 291.1 | 291.1 | 291.1 | 291.1 | 291.1 | 291.1 | 291.1 | 291.1 |
| 2.5° | 363.1 | 345.7 | 330.6 | 330.0 | 344.0 | 349.4 | 347.2 | 342.5 | 336.9 | 325.1 | 350.9 |
| 5° | 454.9 | 430.0 | 425.2 | 419.7 | 407.0 | 410.4 | 389.8 | 405.5 | 410.4 | 421.8 | 439.0 |
| 7.5° | 509.1 | 494.5 | 483.1 | 478.3 | 456.4 | 453.8 | 438.6 | 460.9 | 470.4 | 468.9 | 494.5 |
| 10° | 530.4 | 517.0 | 517.9 | 502.4 | 495.3 | 498.3 | 500.1 | 500.5 | 506.3 | 511.0 | 498.1 |
| 12.5° | 541.3 | 546.5 | 565.4 | 554.9 | 563.9 | 567.6 | 585.6 | 567.1 | 567.8 | 543.5 | 556.8 |
| 15° | 596.6 | 609.5 | 598.5 | 598.1 | 595.3 | 601.3 | 616.8 | 604.3 | 614.0 | 606.3 | 589.1 |
| 17.5° | 663.2 | 667.1 | 646.0 | 637.4 | 648.6 | 646.7 | 642.8 | 644.7 | 620.7 | 665.4 | 644.3 |
| 20° | 683.7 | 698.9 | 671.2 | 637.4 | 674.4 | 679.4 | 678.5 | 670.1 | 628.8 | 693.3 | 672.9 |
| 22.5° | 743.0 | 722.4 | 700.4 | 678.9 | 697.8 | 700.6 | 695.9 | 675.9 | 662.2 | 686.7 | 702.8 |
| 25° | 769.9 | 764.9 | 737.0 | 734.4 | 713.5 | 703.6 | 711.8 | 706.0 | 692.5 | 736.1 | 718.3 |
| 27.5° | 831.3 | 825.5 | 761.3 | 787.7 | 757.4 | 754.8 | 711.6 | 731.0 | 744.5 | 741.3 | 767.9 |
| 30° | 901.0 | 907.7 | 813.7 | 840.2 | 805.1 | 800.4 | 757.0 | 781.5 | 790.7 | 793.7 | 827.0 |
| 32.5° | 978.4 | 996.7 | 903.4 | 881.7 | 863.0 | 866.2 | 829.4 | 784.7 | 820.6 | 890.9 | 905.3 |
| 35° | 1062.2 | 1069.8 | 971.9 | 939.3 | 890.5 | 887.0 | 887.7 | 893.3 | 929.6 | 1009.8 | 1021.0 |
| 37.5° | 1217.2 | 1182.4 | 1096.6 | 1013.9 | 997.5 | 965.5 | 987.2 | 1004.4 | 1040.7 | 1163.7 | 1210.6 |
| 40° | 1312.7 | 1286.9 | 1156.2 | 1108.3 | 1063.1 | 1066.1 | 1106.7 | 1106.5 | 1192.3 | 1319.2 | 1390.7 |
| 42.5° | 1401.1 | 1372.9 | 1249.7 | 1201.6 | 1158.8 | 1169.3 | 1180.9 | 1201.3 | 1365.8 | 1570.3 | 1602.9 |
| 45° | 1472.2 | 1410.5 | 1321.9 | 1311.2 | 1275.9 | 1262.0 | 1311.2 | 1343.9 | 1573.3 | 1773.4 | 1792.3 |
| 47.5° | 1520.6 | 1469.9 | 1383.2 | 1373.8 | 1347.7 | 1381.9 | 1516.3 | 1537.4 | 1734.1 | 1977.4 | 1975.9 |
| 50° | 1594.1 | 1524.7 | 1446.4 | 1441.5 | 1514.8 | 1533.1 | 1696.9 | 1694.7 | 1890.6 | 2146.8 | 2111.4 |
| 52.5° | 1678.8 | 1591.3 | 1506.4 | 1559.5 | 1671.3 | 1680.3 | 1822.4 | 1880.3 | 2061.5 | 2310.2 | 2217.6 |
| 55° | 1776.2 | 1678.4 | 1596.3 | 1667.2 | 1833.6 | 1807.0 | 1950.8 | 2092.0 | 2275.4 | 2482.4 | 2294.3 |
| 57.5° | 1896.8 | 1778.1 | 1711.7 | 1819.6 | 1981.7 | 2005.4 | 2134.6 | 2312.4 | 2447.6 | 2589.5 | 2350.2 |
| 60° | 2024.1 | 1884.8 | 1823.9 | 1926.7 | 2189.2 | 2216.3 | 2342.7 | 2495.6 | 2640.7 | 2690.3 | 2339.7 |
| 62.5° | 2145.6 | 1994.9 | 1939.8 | 2066.7 | 2419.2 | 2486.3 | 2579.6 | 2677.0 | 2801.3 | 2714.8 | 2212.2 |
| 65° | 2280.8 | 2129.9 | 2095.2 | 2285.5 | 2731.2 | 2797.8 | 2919.7 | 2890.5 | 2856.3 | 2628.0 | 2001.3 |
| 67.5° | 2424.0 | 2270.7 | 2277.1 | 2539.4 | 3099.0 | 3110.4 | 3297.7 | 3103.3 | 2791.6 | 2397.9 | 1647.2 |
| 70° | 2500.9 | 2344.0 | 2410.4 | 2810.1 | 3473.3 | 3457.0 | 3495.2 | 3160.5 | 2527.8 | 1895.5 | 1135.3 |
| 72.5° | 2407.6 | 2267.7 | 2389.3 | 2924.0 | 3663.8 | 3646.2 | 3384.3 | 2821.0 | 1976.4 | 1178.8 | 588.6 |
| 75° | 2038.5 | 1903.5 | 2089.7 | 2606.5 | 3298.3 | 3314.6 | 2880.2 | 2097.8 | 1131.5 | 474.0 | 244.4 |
| 77.5° | 1385.2 | 1315.5 | 1475.0 | 1942.8 | 2450.0 | 2506.5 | 2137.0 | 1226.7 | 475.1 | 196.3 | 147.9 |
| 80° | 732.0 | 698.9 | 816.7 | 1119.2 | 1551.3 | 1593.5 | 1256.6 | 611.0 | 243.4 | 127.1 | 105.6 |
| 82.5° | 397.7 | 383.7 | 447.0 | 575.5 | 881.4 | 918.2 | 651.6 | 405.9 | 164.0 | 79.5 | 64.5 |
| 85° | 267.2 | 261.9 | 303.8 | 309.1 | 416.9 | 428.9 | 341.4 | 312.6 | 98.5 | 38.9 | 42.6 |
| 87.5° | 133.7 | 128.3 | 159.9 | 141.2 | 159.1 | 159.3 | 156.5 | 199.5 | 24.9 | 12.9 | 7.7 |
| 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° | 291.1 | 291.1 | 291.1 | 291.1 | 291.1 | 291.1 | 291.1 | 291.1 | 291.1 | 291.1 | 291.1 |
| 2.5° | 351.3 | 343.8 | 317.7 | 317.5 | 321.4 | 318.8 | 320.8 | 310.2 | 305.7 | 326.3 | 325.3 |
| 5° | 436.6 | 414.1 | 392.3 | 384.8 | 376.0 | 356.9 | 358.0 | 358.2 | 354.9 | 367.2 | 368.1 |
| 7.5° | 486.7 | 459.6 | 439.6 | 399.7 | 368.3 | 343.8 | 347.0 | 350.6 | 347.0 | 363.3 | 369.3 |
| 10° | 494.0 | 472.5 | 448.7 | 404.2 | 383.3 | 361.2 | 338.8 | 319.0 | 316.7 | 309.1 | 311.5 |
| 12.5° | 537.5 | 519.6 | 469.7 | 420.9 | 396.6 | 362.7 | 321.8 | 299.3 | 280.3 | 283.6 | 277.5 |
| 15° | 573.2 | 560.5 | 500.7 | 436.9 | 378.8 | 336.7 | 293.2 | 262.3 | 245.3 | 243.4 | 237.3 |
| 17.5° | 621.5 | 603.5 | 503.5 | 425.9 | 355.8 | 305.3 | 256.3 | 221.2 | 213.9 | 210.9 | 207.9 |
| 20° | 644.7 | 612.3 | 493.4 | 391.5 | 328.9 | 267.9 | 219.7 | 189.6 | 187.5 | 192.8 | 191.8 |
| 22.5° | 665.0 | 619.6 | 484.4 | 370.6 | 287.0 | 230.0 | 194.8 | 175.0 | 172.6 | 179.5 | 180.8 |
| 25° | 676.8 | 640.4 | 474.5 | 349.4 | 261.0 | 201.9 | 176.1 | 164.9 | 165.3 | 174.4 | 173.3 |
| 27.5° | 730.1 | 647.8 | 449.5 | 324.2 | 231.1 | 181.0 | 167.0 | 161.2 | 158.9 | 171.3 | 172.4 |
| 30° | 763.6 | 695.5 | 443.9 | 297.5 | 209.0 | 165.8 | 158.9 | 156.5 | 156.1 | 171.1 | 172.2 |
| 32.5° | 826.0 | 711.4 | 446.5 | 268.5 | 189.0 | 161.0 | 152.9 | 152.6 | 156.9 | 171.3 | 173.1 |
| 35° | 912.4 | 778.5 | 434.1 | 252.0 | 178.0 | 153.7 | 148.1 | 149.8 | 157.2 | 172.8 | 175.2 |
| 37.5° | 1080.9 | 841.7 | 437.9 | 236.5 | 174.4 | 151.3 | 146.8 | 147.9 | 159.7 | 176.7 | 183.2 |
| 40° | 1214.5 | 956.3 | 431.9 | 228.7 | 169.4 | 150.9 | 144.0 | 148.3 | 159.5 | 178.9 | 184.7 |
| 42.5° | 1407.9 | 1047.6 | 432.6 | 221.0 | 169.2 | 149.2 | 143.6 | 148.8 | 159.1 | 176.9 | 184.9 |
| 45° | 1573.9 | 1129.5 | 441.8 | 216.5 | 167.0 | 152.0 | 143.0 | 149.4 | 156.3 | 170.1 | 178.9 |
| 47.5° | 1710.0 | 1220.9 | 451.3 | 212.2 | 166.2 | 154.6 | 142.3 | 144.9 | 151.6 | 162.3 | 170.3 |
| 50° | 1820.9 | 1285.2 | 463.3 | 211.3 | 166.2 | 153.3 | 140.6 | 140.4 | 146.0 | 154.6 | 162.1 |
| 52.5° | 1907.4 | 1330.5 | 471.5 | 212.4 | 166.2 | 148.3 | 138.5 | 136.7 | 140.2 | 146.4 | 153.9 |
| 55° | 1969.9 | 1344.5 | 464.8 | 215.2 | 166.0 | 143.8 | 134.6 | 133.1 | 134.8 | 139.1 | 146.2 |
| 57.5° | 1995.1 | 1307.8 | 425.0 | 210.3 | 166.0 | 140.6 | 129.9 | 128.1 | 129.9 | 133.1 | 140.2 |
| 60° | 1932.1 | 1189.5 | 367.6 | 197.6 | 162.7 | 136.3 | 124.5 | 123.4 | 126.0 | 128.8 | 135.7 |
| 62.5° | 1774.1 | 1032.4 | 306.4 | 182.5 | 156.1 | 132.6 | 119.3 | 119.5 | 123.6 | 127.5 | 134.4 |
| 65° | 1528.5 | 842.3 | 255.4 | 167.3 | 147.7 | 126.8 | 113.9 | 115.4 | 121.3 | 126.4 | 133.3 |
| 67.5° | 1202.8 | 624.1 | 215.0 | 152.4 | 135.9 | 117.4 | 107.9 | 108.4 | 112.4 | 117.4 | 124.0 |
| 70° | 804.0 | 397.1 | 176.7 | 135.0 | 120.4 | 105.1 | 98.7 | 97.2 | 96.1 | 100.4 | 106.2 |
| 72.5° | 407.8 | 234.5 | 145.1 | 115.4 | 103.6 | 91.8 | 86.9 | 83.0 | 80.0 | 82.6 | 87.1 |
| 75° | 213.7 | 164.0 | 117.2 | 95.9 | 85.6 | 78.0 | 74.4 | 69.2 | 67.1 | 68.6 | 71.8 |
| 77.5° | 151.1 | 128.3 | 94.8 | 75.9 | 69.7 | 61.9 | 62.6 | 57.2 | 55.5 | 56.3 | 59.8 |
| 80° | 116.1 | 101.7 | 72.9 | 57.4 | 53.7 | 46.2 | 48.4 | 45.1 | 43.0 | 42.6 | 45.1 |
| 82.5° | 79.1 | 76.5 | 51.8 | 40.2 | 37.6 | 32.2 | 35.3 | 34.0 | 31.2 | 29.5 | 30.7 |
| 85° | 53.3 | 50.7 | 31.6 | 23.2 | 22.1 | 16.8 | 21.5 | 20.6 | 18.3 | 15.7 | 15.9 |
| 87.5° | 9.2 | 17.0 | 9.0 | 5.8 | 5.4 | 1.9 | 4.9 | 4.7 | 4.3 | 2.1 | 1.7 |
| 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)