

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: P367009

Luminaire Tested: **MSA-SA1D-727-U-T2-HSS**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P367009
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-9)
Test Lab: INNOVATION CENTER
Issue Date: 12/2/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: MSA-SA1D-727-U-T2-HSS
Description: MESA POST TOP DECORATIVE LUMINAIRE. (1) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4325 lumens
Efficiency: N/A
Efficacy: 64.6 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type II - Medium
BUG Rating: B0 - U0 - G1

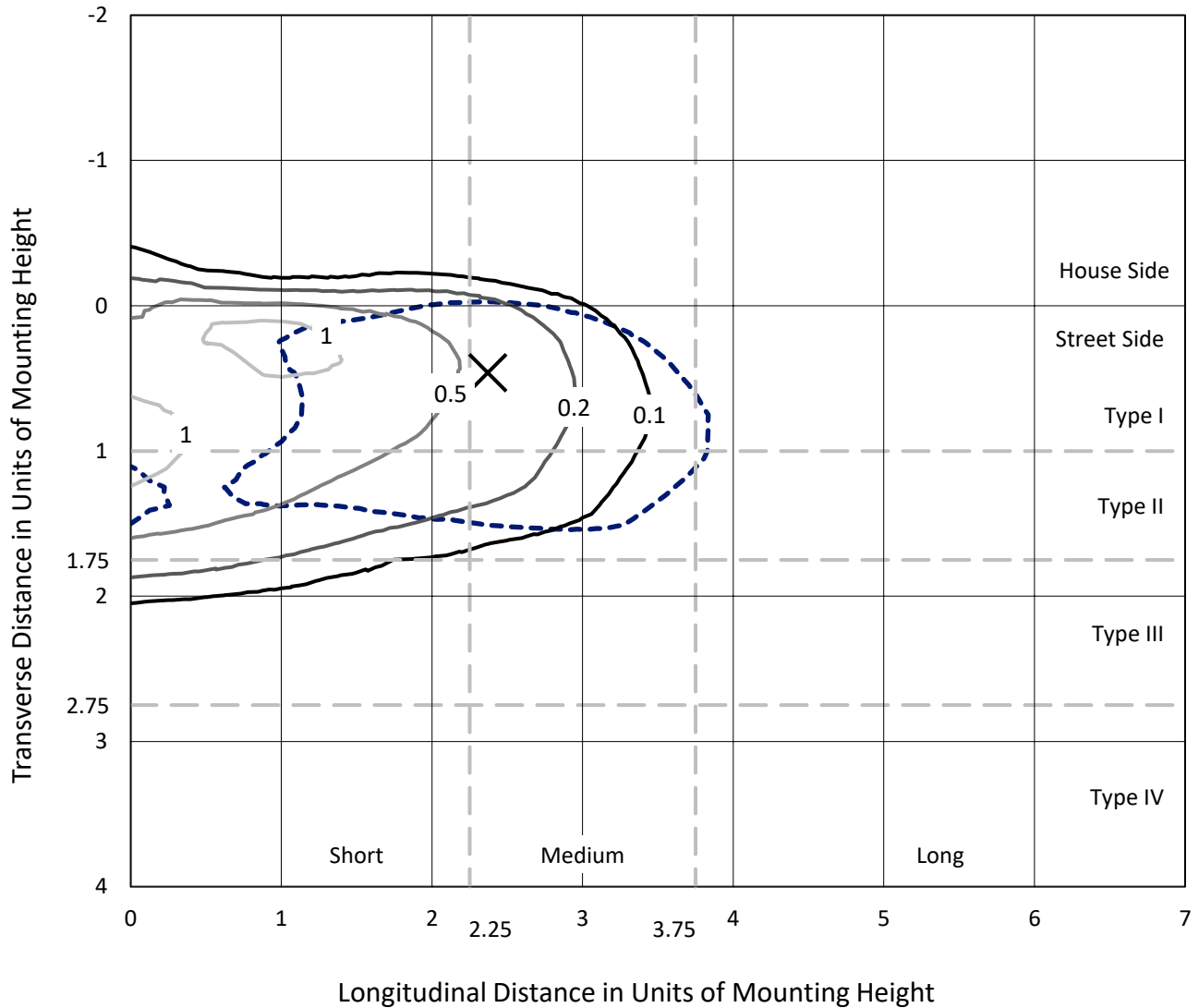
Input Watts (W): 67
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

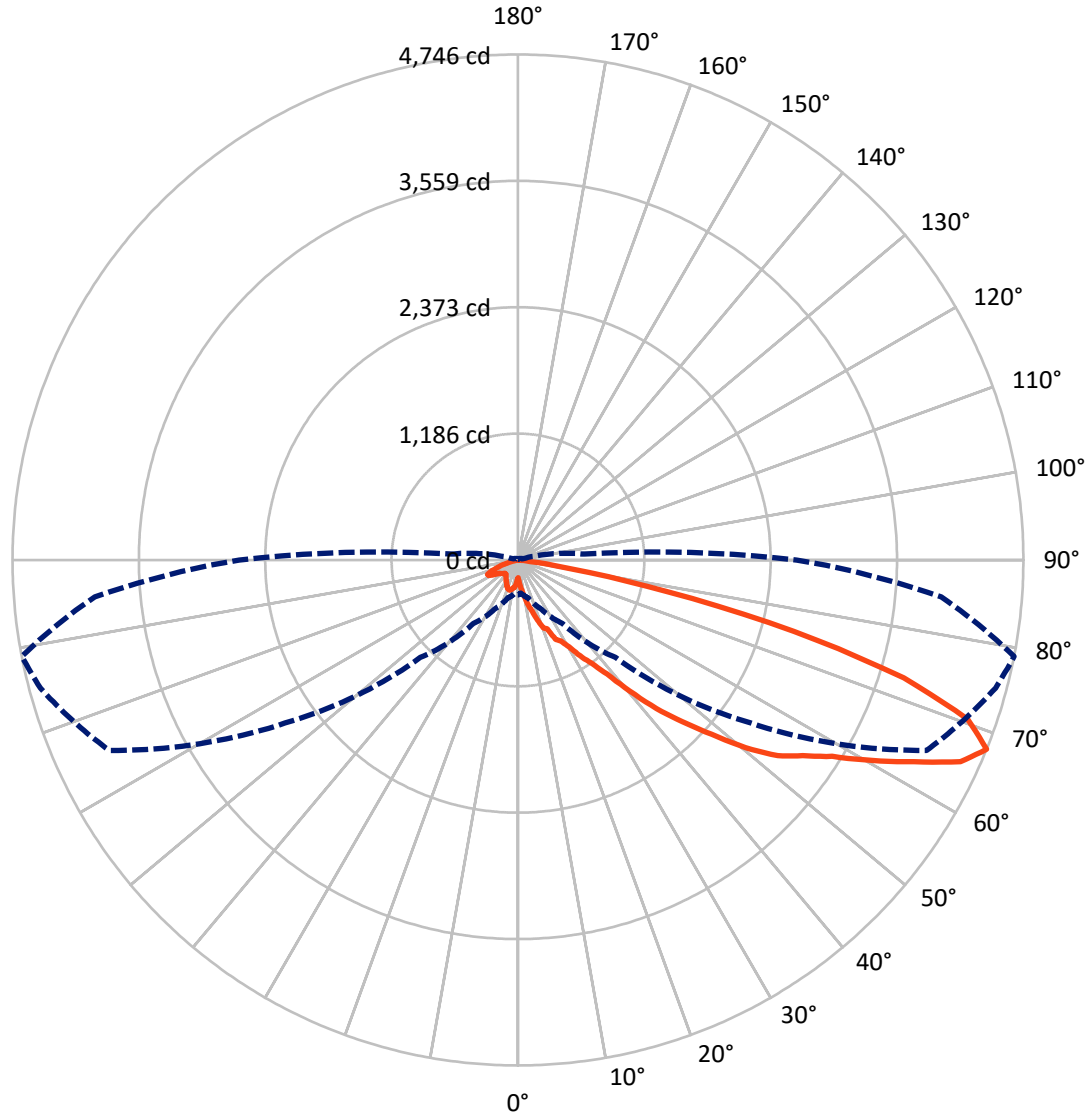
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 1.3 fc
 Type II - Medium - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 79-Deg Lateral - - - Horizontal Cone Through 67.5-Deg Vertical

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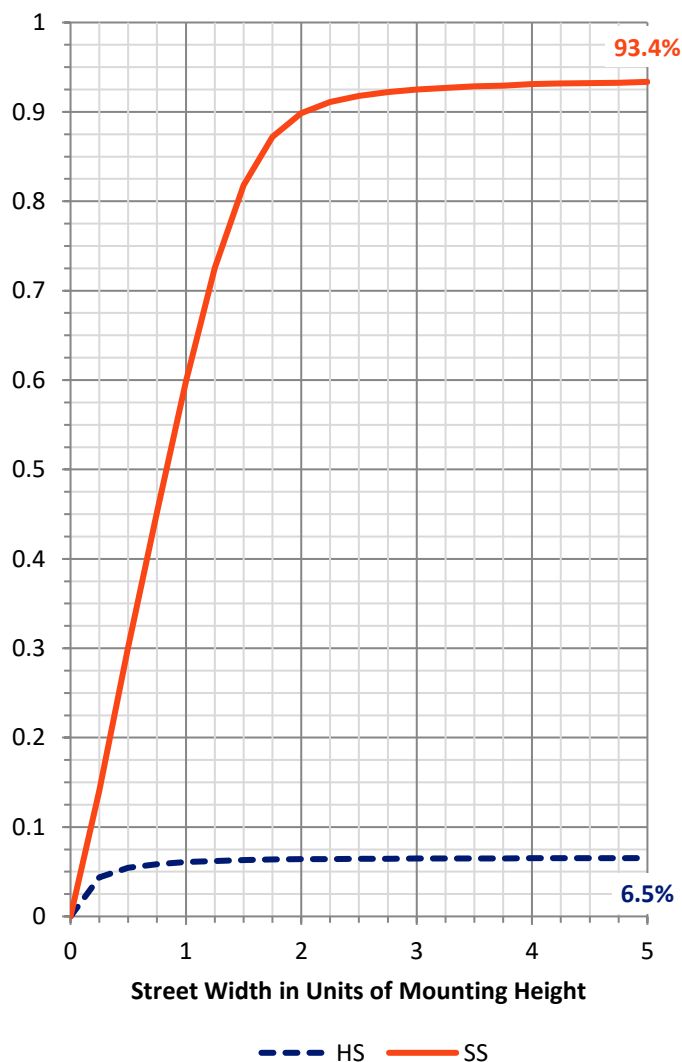
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 284.2 | 0.0 | 284.2 |
| | % Fixture | 6.6 | 0.0 | 6.6 |
| Street Side | Lumens | 4040.8 | 0.0 | 4040.8 |
| | % Fixture | 93.4 | 0.0 | 93.4 |
| Total | Lumens | 4325.0 | 0.0 | 4325.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 24.2 | 0.6 |
| 10°-20° | 96.6 | 2.2 |
| 20°-30° | 186.4 | 4.3 |
| 30°-40° | 366.2 | 8.5 |
| 40°-50° | 733.7 | 17.0 |
| 50°-60° | 1172.7 | 27.1 |
| 60°-70° | 1179.9 | 27.3 |
| 70°-80° | 532.3 | 12.3 |
| 80°-90° | 32.9 | 0.8 |
| 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° | 4325.0 | 100.0 |
| 0°-180° | 4325.0 | 100.0 |

Coefficient of Utilization



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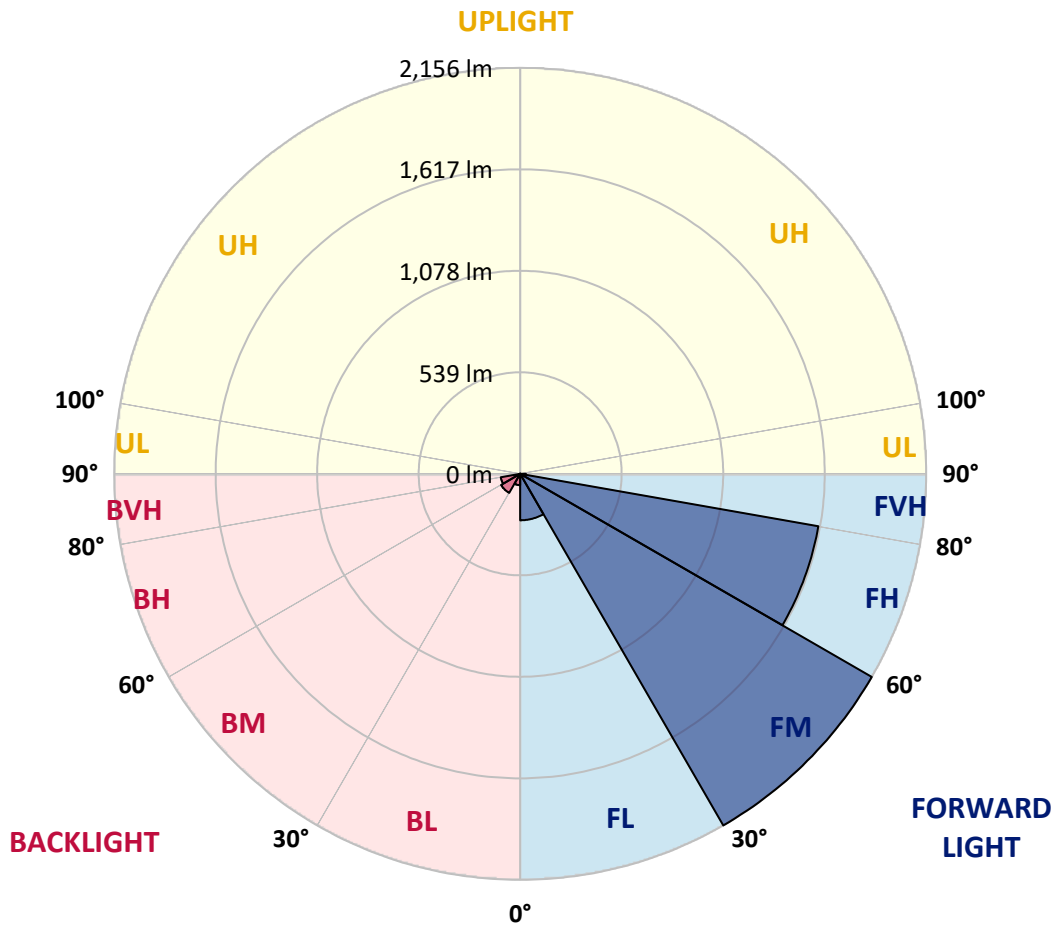
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 246.9 | 5.7 | | | |
| FM (30°-60°) | 2155.6 | 49.8 | | | |
| FH (60°-80°) | 1607.4 | 37.2 | | | G1/1800 |
| FVH (80°-90°) | 30.8 | 0.7 | | | G1/100 |
| BL (0°-30°) | 60.4 | 1.4 | B0/110 | | |
| BM (30°-60°) | 116.9 | 2.7 | B0/220 | | |
| BH (60°-80°) | 104.8 | 2.4 | B0/110 | | G0/110 |
| BVH (80°-90°) | 2.1 | 0.0 | | | G0/10 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B0-U0-G1

Type II Medium





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 79° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 166.7 | 166.7 | 166.7 | 166.7 | 166.7 | 166.7 | 166.7 | 166.7 | 166.7 | 166.7 | 166.7 |
| 2.5° | 225.1 | 217.0 | 203.8 | 211.2 | 210.8 | 214.6 | 207.4 | 199.6 | 186.9 | 199.6 | 200.5 |
| 5° | 324.0 | 309.0 | 299.5 | 297.5 | 287.1 | 277.3 | 275.1 | 267.0 | 260.8 | 249.6 | 259.6 |
| 7.5° | 403.6 | 396.7 | 379.8 | 377.9 | 352.1 | 337.8 | 342.4 | 338.8 | 315.2 | 303.5 | 313.3 |
| 10° | 437.5 | 425.6 | 428.0 | 425.6 | 414.6 | 418.7 | 409.4 | 398.6 | 379.8 | 360.5 | 336.2 |
| 12.5° | 450.6 | 448.7 | 468.5 | 466.1 | 491.9 | 522.8 | 502.1 | 484.2 | 440.6 | 435.8 | 402.7 |
| 15° | 478.7 | 490.7 | 487.8 | 497.8 | 514.3 | 567.0 | 566.5 | 570.8 | 524.5 | 499.7 | 451.8 |
| 17.5° | 503.8 | 512.6 | 498.3 | 509.7 | 554.6 | 586.5 | 629.2 | 612.5 | 617.7 | 592.5 | 518.3 |
| 20° | 493.0 | 503.1 | 488.8 | 481.8 | 560.8 | 621.3 | 678.3 | 666.1 | 697.6 | 681.9 | 579.6 |
| 22.5° | 560.0 | 541.2 | 505.2 | 482.8 | 541.7 | 620.6 | 695.7 | 746.5 | 741.0 | 702.4 | 636.6 |
| 25° | 642.8 | 631.3 | 588.2 | 548.6 | 553.8 | 616.3 | 750.5 | 825.2 | 841.4 | 824.9 | 690.7 |
| 27.5° | 754.4 | 751.7 | 663.5 | 646.3 | 595.3 | 597.5 | 759.1 | 924.3 | 887.4 | 861.6 | 753.9 |
| 30° | 900.0 | 879.3 | 774.6 | 752.2 | 676.9 | 639.9 | 811.6 | 1009.9 | 982.8 | 947.7 | 813.2 |
| 32.5° | 1056.7 | 1059.8 | 926.3 | 852.3 | 791.8 | 747.9 | 790.8 | 1050.0 | 1100.8 | 1072.4 | 887.4 |
| 35° | 1234.5 | 1248.4 | 1085.0 | 998.3 | 880.5 | 815.9 | 880.0 | 1173.0 | 1264.1 | 1189.5 | 986.8 |
| 37.5° | 1508.5 | 1508.0 | 1317.3 | 1144.4 | 1058.8 | 988.7 | 1028.5 | 1284.8 | 1464.8 | 1359.9 | 1165.1 |
| 40° | 1749.5 | 1697.1 | 1519.7 | 1321.1 | 1187.6 | 1168.5 | 1139.6 | 1437.9 | 1679.2 | 1616.0 | 1323.7 |
| 42.5° | 1929.5 | 1892.6 | 1678.2 | 1523.7 | 1358.3 | 1297.7 | 1287.5 | 1662.2 | 1995.6 | 1907.1 | 1549.9 |
| 45° | 2144.8 | 2023.7 | 1865.9 | 1726.6 | 1558.1 | 1540.4 | 1516.3 | 1889.9 | 2363.7 | 2164.3 | 1746.6 |
| 47.5° | 2337.7 | 2223.7 | 2074.5 | 1895.7 | 1702.1 | 1847.5 | 1755.0 | 2090.0 | 2631.4 | 2444.3 | 1963.6 |
| 50° | 2500.0 | 2378.9 | 2211.8 | 2075.7 | 1992.7 | 2091.4 | 1937.1 | 2254.7 | 2920.6 | 2769.0 | 2166.5 |
| 52.5° | 2582.8 | 2445.7 | 2316.5 | 2232.3 | 2283.1 | 2260.9 | 2184.1 | 2454.3 | 3167.1 | 3053.6 | 2346.3 |
| 55° | 2514.8 | 2380.8 | 2326.7 | 2368.4 | 2522.7 | 2458.6 | 2464.8 | 2763.5 | 3399.8 | 3243.4 | 2502.7 |
| 57.5° | 2213.5 | 2091.2 | 2115.2 | 2229.4 | 2525.1 | 2692.9 | 2784.7 | 3063.9 | 3586.5 | 3479.9 | 2743.9 |
| 60° | 1674.4 | 1575.9 | 1665.1 | 1867.8 | 2287.6 | 2646.2 | 3011.7 | 3364.3 | 3853.3 | 3819.9 | 3109.2 |
| 62.5° | 1022.6 | 969.2 | 1095.5 | 1348.2 | 1822.9 | 2417.1 | 3144.0 | 3764.8 | 4138.7 | 4174.2 | 3496.6 |
| 65° | 521.7 | 497.6 | 603.0 | 825.2 | 1231.7 | 1985.5 | 3048.4 | 4013.8 | 4433.6 | 4564.7 | 3865.9 |
| 67.5° | 328.5 | 313.0 | 369.3 | 503.3 | 726.7 | 1295.1 | 2669.1 | 4231.4 | 4642.0 | 4745.7 | 3989.2 |
| 70° | 227.7 | 217.9 | 266.6 | 345.5 | 458.5 | 697.6 | 1981.7 | 4028.3 | 4476.8 | 4481.5 | 3690.9 |
| 72.5° | 144.5 | 136.9 | 184.3 | 255.8 | 338.3 | 360.2 | 1136.1 | 3160.9 | 3832.1 | 3788.0 | 2989.0 |
| 75° | 93.7 | 89.9 | 117.1 | 187.4 | 259.9 | 222.2 | 561.5 | 2132.9 | 2747.8 | 2678.6 | 1985.3 |
| 77.5° | 67.2 | 64.8 | 78.4 | 125.2 | 185.0 | 155.4 | 251.8 | 1271.2 | 1575.5 | 1424.3 | 963.7 |
| 80° | 40.5 | 40.3 | 56.7 | 78.4 | 131.6 | 109.7 | 116.3 | 577.2 | 610.8 | 498.1 | 294.4 |
| 82.5° | 20.3 | 21.0 | 31.7 | 50.5 | 84.6 | 71.8 | 53.2 | 192.2 | 164.0 | 120.9 | 59.6 |
| 85° | 4.8 | 6.0 | 16.7 | 34.8 | 42.4 | 28.6 | 25.3 | 50.3 | 45.1 | 34.1 | 17.4 |
| 87.5° | 0.0 | 0.0 | 5.2 | 8.3 | 11.4 | 4.8 | 8.6 | 9.5 | 12.2 | 9.5 | 3.6 |
| 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° | 166.7 | 166.7 | 166.7 | 166.7 | 166.7 | 166.7 | 166.7 | 166.7 | 166.7 | 166.7 | 166.7 |
| 2.5° | 200.7 | 197.9 | 180.5 | 176.0 | 175.5 | 170.5 | 171.7 | 166.9 | 167.1 | 177.9 | 177.9 |
| 5° | 255.8 | 239.1 | 222.4 | 207.7 | 197.6 | 183.3 | 178.1 | 176.0 | 174.0 | 178.3 | 181.0 |
| 7.5° | 300.4 | 275.8 | 245.8 | 213.6 | 183.8 | 163.3 | 160.5 | 155.2 | 153.3 | 157.6 | 160.9 |
| 10° | 320.2 | 289.7 | 248.4 | 201.5 | 173.6 | 156.9 | 143.1 | 135.7 | 134.2 | 134.0 | 135.2 |
| 12.5° | 362.2 | 324.2 | 251.3 | 196.9 | 166.7 | 148.3 | 132.6 | 120.2 | 108.7 | 109.9 | 108.7 |
| 15° | 395.8 | 350.9 | 251.3 | 186.0 | 150.0 | 131.6 | 103.9 | 97.8 | 96.1 | 98.7 | 96.6 |
| 17.5° | 446.6 | 377.4 | 238.7 | 166.4 | 135.7 | 102.3 | 91.8 | 91.3 | 94.7 | 98.5 | 96.1 |
| 20° | 477.1 | 381.0 | 217.4 | 144.0 | 111.3 | 88.7 | 84.9 | 81.1 | 85.8 | 88.9 | 87.7 |
| 22.5° | 508.8 | 381.2 | 196.2 | 132.1 | 89.6 | 80.8 | 74.6 | 71.5 | 72.2 | 75.1 | 75.6 |
| 25° | 522.4 | 371.9 | 176.4 | 116.3 | 81.3 | 72.2 | 65.8 | 62.5 | 61.3 | 62.7 | 62.2 |
| 27.5° | 559.3 | 354.0 | 155.0 | 99.2 | 77.2 | 64.1 | 58.2 | 54.1 | 50.5 | 52.9 | 53.4 |
| 30° | 564.6 | 348.3 | 143.3 | 88.2 | 72.0 | 56.7 | 51.5 | 47.2 | 44.6 | 47.9 | 47.9 |
| 32.5° | 581.3 | 316.9 | 137.3 | 83.7 | 66.5 | 52.5 | 45.3 | 42.2 | 41.7 | 43.9 | 44.1 |
| 35° | 607.0 | 303.0 | 128.5 | 80.1 | 61.5 | 47.4 | 40.8 | 39.3 | 38.9 | 40.5 | 40.5 |
| 37.5° | 694.3 | 285.9 | 118.7 | 77.0 | 57.2 | 44.8 | 39.6 | 37.2 | 37.4 | 38.9 | 39.8 |
| 40° | 752.2 | 288.0 | 104.2 | 73.2 | 52.2 | 42.4 | 37.2 | 35.5 | 35.3 | 36.0 | 36.7 |
| 42.5° | 859.7 | 289.7 | 97.8 | 69.1 | 48.4 | 39.6 | 34.8 | 33.6 | 32.7 | 33.4 | 34.1 |
| 45° | 979.9 | 298.5 | 94.4 | 65.8 | 46.3 | 37.9 | 32.7 | 31.9 | 29.8 | 30.3 | 31.2 |
| 47.5° | 1095.8 | 330.7 | 90.4 | 61.0 | 44.3 | 37.0 | 30.5 | 28.8 | 27.4 | 27.2 | 28.1 |
| 50° | 1227.4 | 361.9 | 85.8 | 55.8 | 42.4 | 35.5 | 28.4 | 25.7 | 24.8 | 24.8 | 25.5 |
| 52.5° | 1345.1 | 391.7 | 81.5 | 52.2 | 41.0 | 32.9 | 26.5 | 23.8 | 23.1 | 23.1 | 24.1 |
| 55° | 1469.1 | 423.0 | 77.7 | 48.9 | 39.1 | 30.3 | 24.8 | 22.4 | 22.2 | 21.7 | 22.4 |
| 57.5° | 1688.0 | 491.1 | 73.0 | 46.0 | 36.5 | 28.1 | 23.4 | 21.0 | 20.5 | 19.8 | 20.5 |
| 60° | 2006.8 | 595.8 | 66.8 | 43.2 | 33.4 | 26.7 | 22.2 | 19.3 | 18.6 | 17.4 | 17.6 |
| 62.5° | 2318.4 | 680.4 | 59.6 | 39.6 | 30.5 | 25.3 | 20.3 | 17.4 | 16.2 | 14.8 | 15.0 |
| 65° | 2585.4 | 713.8 | 52.0 | 35.3 | 27.7 | 21.9 | 17.6 | 15.3 | 13.6 | 11.7 | 11.4 |
| 67.5° | 2616.9 | 630.4 | 44.6 | 31.2 | 24.8 | 18.6 | 15.0 | 13.6 | 11.0 | 9.3 | 8.8 |
| 70° | 2355.1 | 469.7 | 37.2 | 27.7 | 21.5 | 15.7 | 12.9 | 11.9 | 10.3 | 8.8 | 8.1 |
| 72.5° | 1875.4 | 346.7 | 31.2 | 24.6 | 18.8 | 13.4 | 11.0 | 11.2 | 10.3 | 8.6 | 7.6 |
| 75° | 1240.2 | 198.4 | 25.5 | 20.5 | 15.7 | 10.7 | 10.0 | 10.0 | 9.8 | 8.1 | 7.2 |
| 77.5° | 596.8 | 85.6 | 19.6 | 16.2 | 12.6 | 8.1 | 9.1 | 9.1 | 9.3 | 7.4 | 6.0 |
| 80° | 169.3 | 25.7 | 12.2 | 11.0 | 9.3 | 5.5 | 7.2 | 6.9 | 6.2 | 4.3 | 2.6 |
| 82.5° | 30.3 | 10.0 | 5.5 | 5.7 | 5.2 | 2.1 | 4.1 | 3.8 | 3.1 | 1.7 | 0.2 |
| 85° | 8.3 | 3.8 | 3.1 | 3.3 | 2.6 | 0.7 | 1.7 | 2.1 | 1.7 | 1.0 | 0.0 |
| 87.5° | 2.1 | 1.7 | 2.1 | 2.4 | 1.9 | 0.2 | 0.7 | 0.2 | 0.7 | 0.2 | 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)