

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: P367130

Luminaire Tested: **MSA-SA2A-727-U-RW**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P367130
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-7)
Test Lab: INNOVATION CENTER
Issue Date: 12/2/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: MSA-SA2A-727-U-RW
Description: MESA POST TOP DECORATIVE LUMINAIRE. (2) LIGHTSQUARES WITH 16 LEDS EACH AND RECTANGULAR WIDE OPTICS.
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6827 lumens
Efficiency: N/A
Efficacy: 103.4 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type III - Short
BUG Rating: B3 - U0 - G3

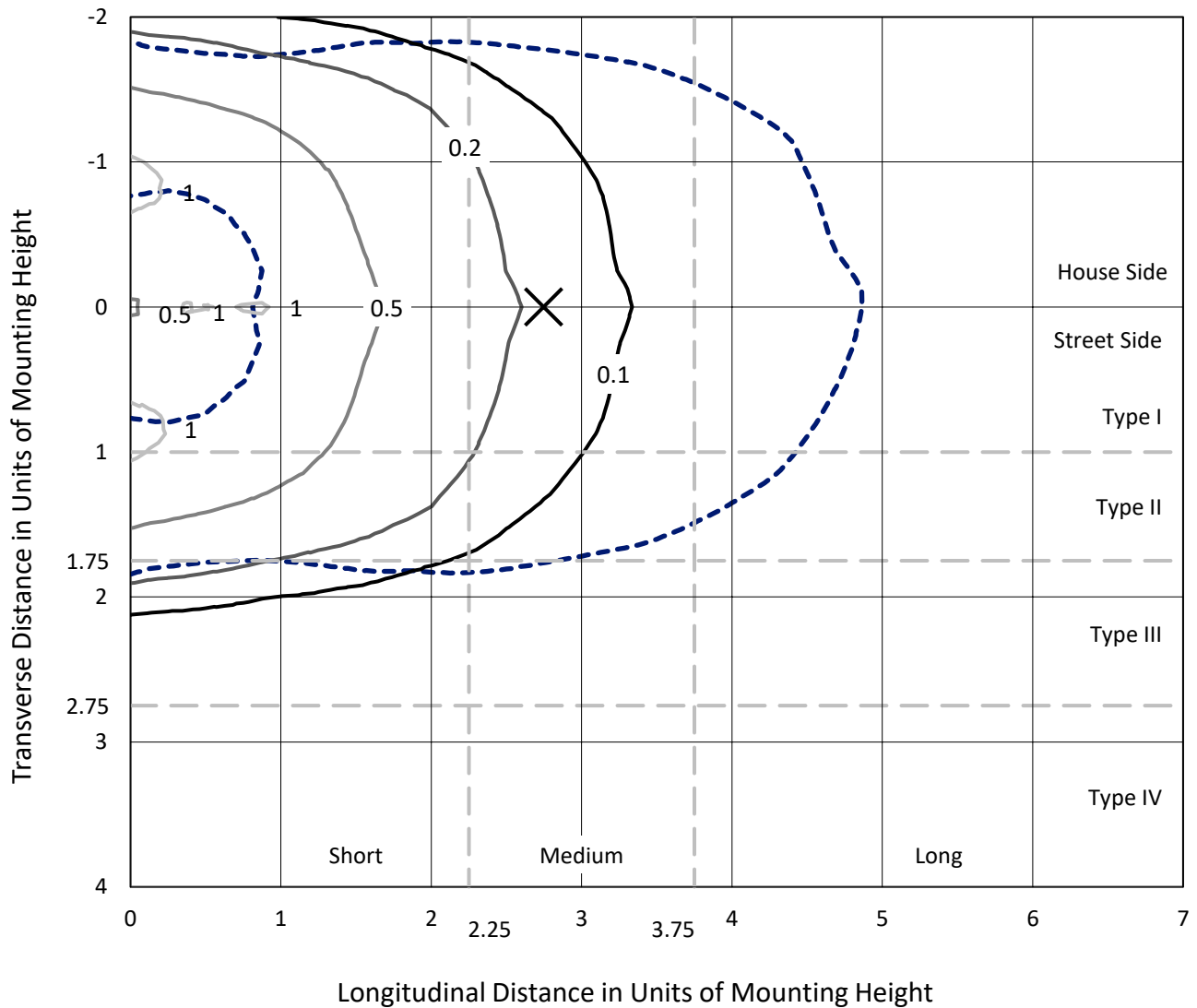
Input Watts (W): 66
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

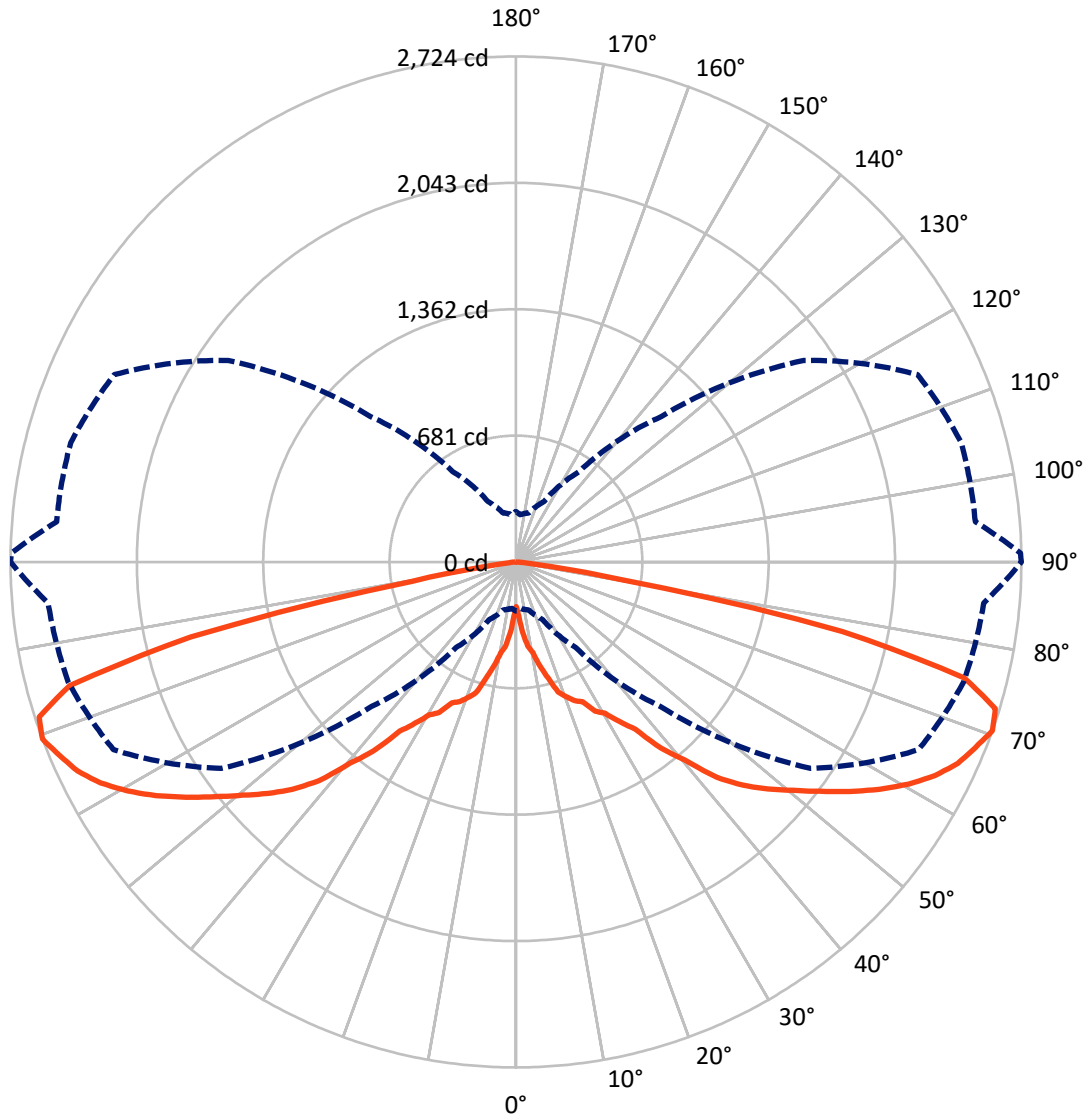
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 1.1 fc
 Type III - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 90-Deg Lateral - - - Horizontal Cone Through 70-Deg Vertical

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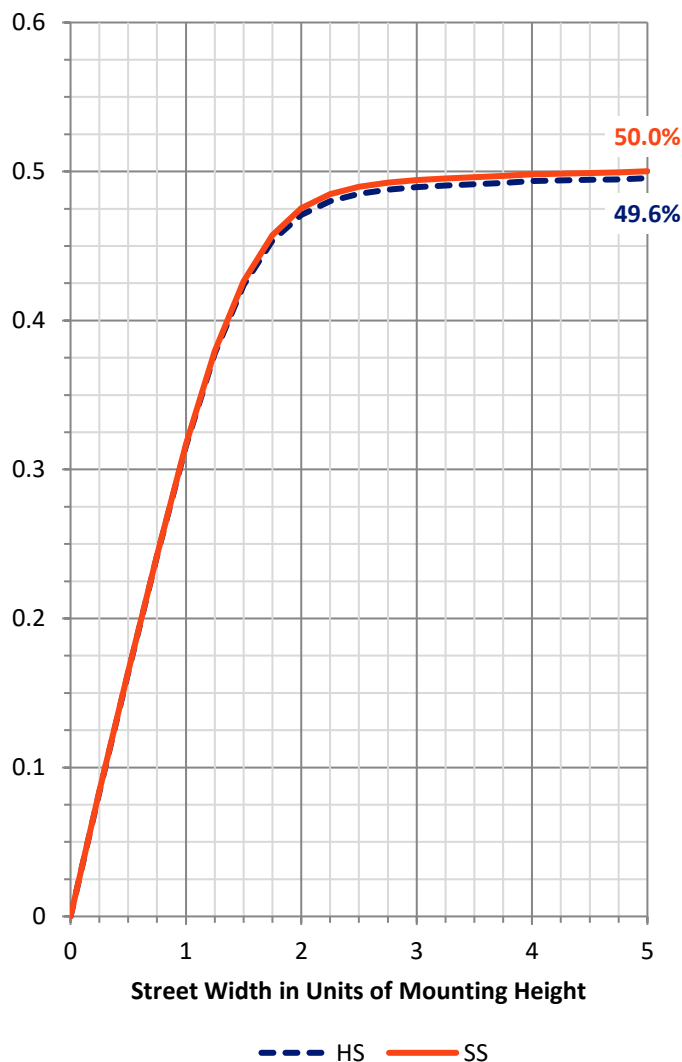
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 3400.9 | 0.0 | 3400.9 |
| | % Fixture | 49.8 | 0.0 | 49.8 |
| Street Side | Lumens | 3426.1 | 0.0 | 3426.1 |
| | % Fixture | 50.2 | 0.0 | 50.2 |
| Total | Lumens | 6827.0 | 0.0 | 6827.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 36.1 | 0.5 |
| 10°-20° | 165.7 | 2.4 |
| 20°-30° | 358.2 | 5.2 |
| 30°-40° | 683.4 | 10.0 |
| 40°-50° | 1241.5 | 18.2 |
| 50°-60° | 1744.0 | 25.5 |
| 60°-70° | 1665.2 | 24.4 |
| 70°-80° | 854.6 | 12.5 |
| 80°-90° | 78.3 | 1.1 |
| 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° | 6827.0 | 100.0 |
| 0°-180° | 6827.0 | 100.0 |

Coefficient of Utilization



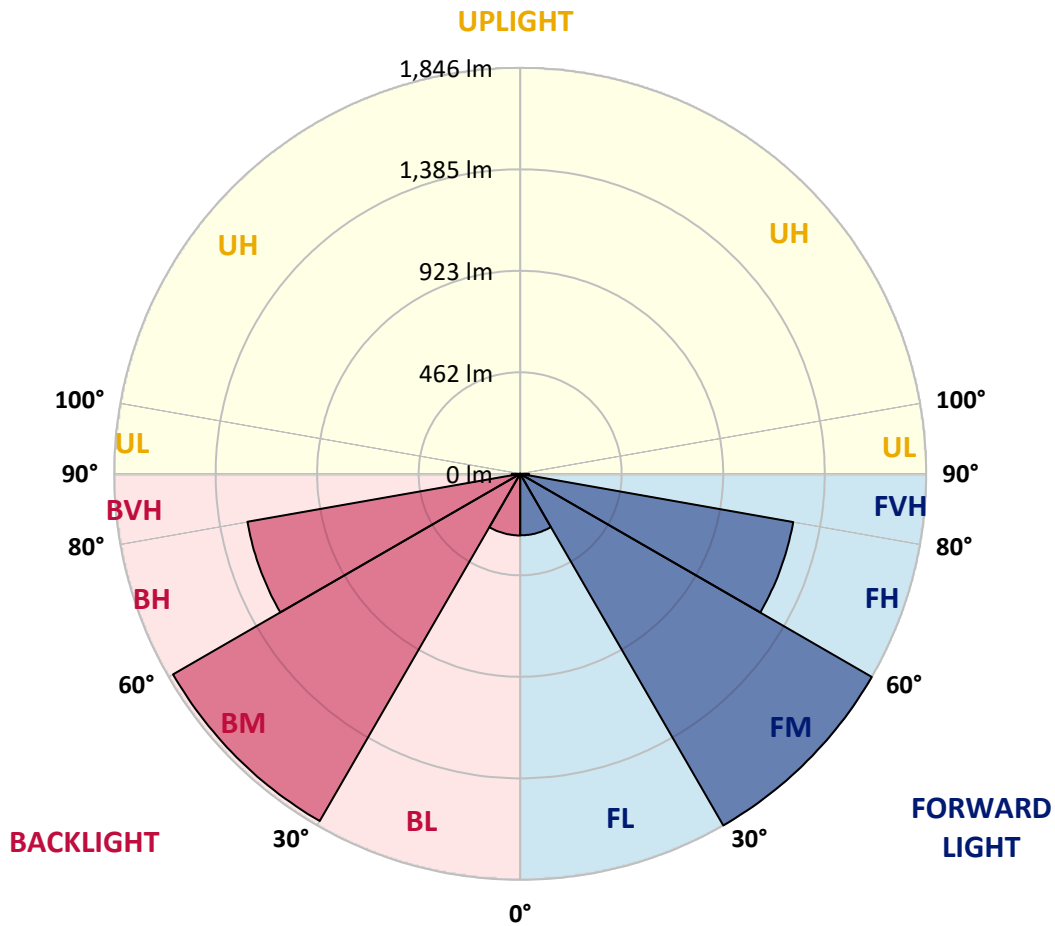
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 279.7 | 4.1 | | | |
| FM (30°-60°) | 1846.1 | 27.0 | | | |
| FH (60°-80°) | 1260.6 | 18.5 | | | G1/1800 |
| FVH (80°-90°) | 39.8 | 0.6 | | | G1/100 |
| BL (0°-30°) | 280.3 | 4.1 | B1/500 | | |
| BM (30°-60°) | 1822.8 | 26.7 | B2/2500 | | |
| BH (60°-80°) | 1259.2 | 18.4 | B3/2500 | | G3/2500 |
| BVH (80°-90°) | 38.6 | 0.6 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B3-U0-G3

Type III Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 90° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 239.6 | 239.6 | 239.6 | 239.6 | 239.6 | 239.6 | 239.6 | 239.6 | 239.6 | 239.6 | 239.6 |
| 2.5° | 290.2 | 279.5 | 265.9 | 273.9 | 277.2 | 283.1 | 282.2 | 279.5 | 267.6 | 287.5 | 289.7 |
| 5° | 363.3 | 346.1 | 339.8 | 338.7 | 340.3 | 334.8 | 352.8 | 347.5 | 357.2 | 375.2 | 379.3 |
| 7.5° | 413.6 | 400.9 | 387.4 | 391.5 | 374.4 | 371.9 | 395.1 | 415.9 | 421.1 | 454.0 | 456.3 |
| 10° | 437.4 | 425.0 | 428.6 | 426.1 | 424.2 | 440.2 | 451.0 | 466.2 | 488.1 | 491.1 | 495.8 |
| 12.5° | 457.6 | 462.6 | 478.4 | 477.8 | 503.8 | 532.3 | 528.2 | 544.0 | 547.6 | 585.7 | 574.1 |
| 15° | 508.8 | 519.1 | 518.0 | 527.6 | 539.0 | 585.7 | 586.0 | 612.9 | 637.5 | 652.4 | 648.6 |
| 17.5° | 583.8 | 587.4 | 572.5 | 573.0 | 605.9 | 625.0 | 646.3 | 641.6 | 705.8 | 735.2 | 737.1 |
| 20° | 628.6 | 637.8 | 620.6 | 597.9 | 656.3 | 682.6 | 694.5 | 667.1 | 735.7 | 775.3 | 775.3 |
| 22.5° | 706.9 | 683.4 | 657.4 | 642.2 | 693.7 | 721.6 | 720.2 | 712.5 | 749.0 | 819.0 | 812.4 |
| 25° | 750.1 | 736.8 | 723.8 | 727.7 | 753.7 | 768.1 | 787.2 | 769.2 | 803.5 | 855.5 | 833.7 |
| 27.5° | 832.0 | 807.4 | 743.5 | 794.4 | 794.4 | 783.6 | 824.0 | 832.6 | 810.1 | 894.8 | 911.1 |
| 30° | 924.7 | 916.1 | 825.6 | 879.6 | 863.0 | 832.6 | 910.0 | 904.5 | 866.9 | 953.2 | 945.7 |
| 32.5° | 1012.4 | 1040.6 | 954.9 | 925.2 | 950.1 | 961.8 | 921.1 | 937.7 | 944.9 | 1028.2 | 1024.6 |
| 35° | 1146.9 | 1170.7 | 1057.0 | 1049.5 | 1008.0 | 997.2 | 1028.2 | 1033.7 | 1034.3 | 1122.0 | 1105.9 |
| 37.5° | 1379.6 | 1345.3 | 1232.9 | 1180.1 | 1184.8 | 1171.8 | 1177.9 | 1134.1 | 1140.2 | 1267.5 | 1275.5 |
| 40° | 1549.7 | 1511.0 | 1385.9 | 1348.0 | 1255.1 | 1310.7 | 1261.4 | 1257.0 | 1244.8 | 1409.7 | 1405.3 |
| 42.5° | 1737.6 | 1684.5 | 1546.1 | 1495.5 | 1396.7 | 1374.0 | 1351.3 | 1402.5 | 1399.2 | 1551.9 | 1585.7 |
| 45° | 1879.5 | 1772.2 | 1700.0 | 1668.4 | 1609.2 | 1553.6 | 1532.0 | 1555.0 | 1544.5 | 1657.9 | 1716.9 |
| 47.5° | 1969.2 | 1875.9 | 1792.9 | 1726.5 | 1669.8 | 1806.2 | 1696.9 | 1666.2 | 1644.9 | 1771.9 | 1828.6 |
| 50° | 2040.6 | 1932.9 | 1835.0 | 1812.9 | 1857.7 | 1978.3 | 1805.9 | 1738.2 | 1764.2 | 1857.7 | 1934.9 |
| 52.5° | 2059.9 | 1946.0 | 1858.0 | 1843.9 | 1965.0 | 1986.9 | 1959.0 | 1845.0 | 1838.0 | 1960.6 | 2053.9 |
| 55° | 2000.7 | 1891.4 | 1849.7 | 1926.9 | 2060.8 | 2042.5 | 2085.1 | 2012.4 | 1963.4 | 2065.8 | 2183.1 |
| 57.5° | 1848.3 | 1739.8 | 1729.9 | 1841.1 | 2009.9 | 2165.4 | 2186.4 | 2128.8 | 2064.6 | 2173.1 | 2311.5 |
| 60° | 1597.9 | 1498.8 | 1524.0 | 1646.8 | 1901.4 | 2122.8 | 2234.5 | 2182.0 | 2162.0 | 2270.0 | 2430.4 |
| 62.5° | 1208.0 | 1130.8 | 1198.1 | 1369.3 | 1703.3 | 2067.7 | 2300.9 | 2292.6 | 2263.9 | 2372.9 | 2535.6 |
| 65° | 770.3 | 729.6 | 798.2 | 972.3 | 1395.9 | 1967.5 | 2332.8 | 2343.8 | 2370.4 | 2452.3 | 2616.9 |
| 67.5° | 447.7 | 426.1 | 467.9 | 610.4 | 994.1 | 1615.6 | 2273.5 | 2432.4 | 2446.2 | 2493.2 | 2670.3 |
| 70° | 264.8 | 250.7 | 267.8 | 342.8 | 562.8 | 1100.7 | 1939.3 | 2393.6 | 2498.2 | 2530.9 | 2724.3 |
| 72.5° | 202.0 | 188.7 | 181.2 | 202.8 | 293.8 | 568.6 | 1311.2 | 2029.0 | 2456.4 | 2506.0 | 2701.6 |
| 75° | 174.6 | 161.9 | 153.0 | 154.9 | 174.9 | 270.0 | 710.8 | 1451.2 | 2093.1 | 2281.9 | 2495.5 |
| 77.5° | 150.0 | 138.6 | 132.3 | 131.7 | 134.2 | 148.3 | 297.2 | 786.9 | 1311.0 | 1640.2 | 1799.0 |
| 80° | 120.1 | 111.2 | 109.8 | 109.8 | 106.2 | 105.1 | 147.8 | 299.4 | 498.9 | 591.6 | 567.2 |
| 82.5° | 87.7 | 78.9 | 87.7 | 86.6 | 81.1 | 76.6 | 94.1 | 129.5 | 153.8 | 121.5 | 96.0 |
| 85° | 59.2 | 51.2 | 57.8 | 58.9 | 53.7 | 39.8 | 56.4 | 64.7 | 66.4 | 41.5 | 34.3 |
| 87.5° | 20.8 | 20.2 | 32.6 | 28.5 | 23.2 | 13.6 | 20.8 | 22.4 | 23.5 | 14.7 | 10.0 |
| 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):

| | 91° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 239.6 | 239.6 | 239.6 | 239.6 | 239.6 | 239.6 | 239.6 | 239.6 | 239.6 | 239.6 | 239.6 |
| 2.5° | 290.5 | 287.2 | 270.6 | 273.1 | 279.5 | 282.5 | 285.5 | 273.1 | 267.0 | 286.4 | 284.4 |
| 5° | 380.4 | 368.3 | 354.7 | 352.8 | 353.6 | 341.7 | 348.6 | 345.6 | 347.0 | 359.4 | 361.9 |
| 7.5° | 455.7 | 441.0 | 423.1 | 408.9 | 384.6 | 365.2 | 381.6 | 389.9 | 392.3 | 414.5 | 422.8 |
| 10° | 496.4 | 483.9 | 478.7 | 452.1 | 444.1 | 441.6 | 437.7 | 424.4 | 439.1 | 433.8 | 438.0 |
| 12.5° | 576.1 | 573.6 | 546.2 | 528.8 | 530.4 | 535.1 | 510.8 | 497.5 | 478.4 | 508.3 | 497.5 |
| 15° | 643.9 | 654.6 | 627.3 | 595.4 | 579.7 | 587.7 | 569.1 | 549.8 | 532.6 | 541.8 | 530.1 |
| 17.5° | 730.5 | 730.2 | 676.8 | 642.7 | 641.4 | 640.8 | 613.4 | 570.8 | 591.3 | 584.9 | 585.5 |
| 20° | 776.4 | 768.9 | 702.5 | 663.2 | 696.7 | 684.8 | 660.2 | 605.4 | 629.2 | 636.9 | 641.9 |
| 22.5° | 814.8 | 810.7 | 730.2 | 701.4 | 723.0 | 723.3 | 698.6 | 669.9 | 666.8 | 690.9 | 677.9 |
| 25° | 841.7 | 858.3 | 782.5 | 775.6 | 785.0 | 775.6 | 751.5 | 732.7 | 720.5 | 756.5 | 720.5 |
| 27.5° | 905.3 | 881.8 | 790.5 | 829.8 | 835.6 | 788.3 | 818.4 | 796.3 | 762.6 | 807.1 | 821.8 |
| 30° | 950.7 | 964.5 | 846.9 | 906.2 | 899.2 | 855.5 | 868.0 | 867.1 | 826.7 | 913.6 | 903.4 |
| 32.5° | 1028.7 | 1012.1 | 939.1 | 934.4 | 951.0 | 949.0 | 928.0 | 938.3 | 948.2 | 1011.3 | 1026.5 |
| 35° | 1108.7 | 1126.4 | 998.0 | 1029.8 | 1025.1 | 995.2 | 1050.3 | 1043.9 | 1073.6 | 1203.0 | 1160.2 |
| 37.5° | 1289.1 | 1204.7 | 1130.3 | 1126.1 | 1157.7 | 1162.4 | 1144.7 | 1172.6 | 1236.5 | 1336.1 | 1382.1 |
| 40° | 1407.2 | 1368.8 | 1242.3 | 1247.3 | 1203.6 | 1278.9 | 1229.1 | 1319.0 | 1367.7 | 1535.6 | 1519.3 |
| 42.5° | 1586.0 | 1492.2 | 1370.7 | 1387.3 | 1378.5 | 1342.2 | 1407.8 | 1454.0 | 1523.7 | 1651.8 | 1734.6 |
| 45° | 1719.1 | 1590.4 | 1532.9 | 1522.6 | 1521.5 | 1584.6 | 1576.3 | 1650.2 | 1675.1 | 1771.4 | 1840.0 |
| 47.5° | 1820.1 | 1710.8 | 1625.5 | 1637.2 | 1603.4 | 1783.5 | 1687.5 | 1710.5 | 1760.8 | 1851.6 | 1931.6 |
| 50° | 1939.9 | 1818.1 | 1721.3 | 1750.1 | 1832.2 | 1901.4 | 1814.5 | 1775.2 | 1799.9 | 1906.9 | 1996.0 |
| 52.5° | 2050.8 | 1922.7 | 1816.2 | 1840.3 | 1974.4 | 1942.9 | 1933.5 | 1834.2 | 1831.1 | 1917.2 | 2018.4 |
| 55° | 2180.6 | 2036.2 | 1942.1 | 2018.4 | 2066.0 | 2027.0 | 2012.1 | 1891.2 | 1816.5 | 1864.3 | 1959.8 |
| 57.5° | 2307.9 | 2148.5 | 2055.0 | 2070.7 | 2131.1 | 2092.3 | 1980.3 | 1794.0 | 1700.8 | 1710.2 | 1806.8 |
| 60° | 2427.1 | 2251.7 | 2174.5 | 2159.3 | 2207.4 | 2055.5 | 1859.3 | 1616.1 | 1492.5 | 1469.8 | 1553.3 |
| 62.5° | 2529.2 | 2338.0 | 2265.0 | 2223.5 | 2269.4 | 2056.9 | 1670.9 | 1330.6 | 1194.7 | 1117.8 | 1182.8 |
| 65° | 2610.3 | 2409.7 | 2357.7 | 2336.1 | 2352.7 | 1931.8 | 1377.4 | 977.0 | 810.4 | 725.2 | 763.1 |
| 67.5° | 2664.2 | 2449.8 | 2426.0 | 2454.2 | 2232.9 | 1608.9 | 1020.4 | 625.3 | 471.2 | 424.7 | 448.5 |
| 70° | 2720.1 | 2485.2 | 2484.4 | 2388.4 | 1893.4 | 1109.2 | 596.0 | 360.5 | 274.2 | 256.2 | 271.2 |
| 72.5° | 2701.3 | 2443.2 | 2455.6 | 2088.7 | 1312.1 | 592.9 | 314.6 | 203.9 | 185.7 | 192.0 | 205.3 |
| 75° | 2501.5 | 2221.3 | 2161.2 | 1501.6 | 744.3 | 275.6 | 181.2 | 154.4 | 153.3 | 163.0 | 176.0 |
| 77.5° | 1814.5 | 1547.0 | 1388.1 | 851.1 | 319.0 | 149.1 | 133.4 | 128.9 | 128.9 | 136.7 | 148.3 |
| 80° | 598.2 | 517.7 | 539.5 | 329.3 | 150.8 | 102.9 | 104.0 | 106.0 | 105.4 | 107.4 | 117.0 |
| 82.5° | 98.2 | 101.8 | 157.4 | 134.5 | 91.0 | 70.3 | 78.6 | 82.5 | 83.6 | 74.7 | 84.9 |
| 85° | 34.9 | 39.3 | 67.0 | 62.3 | 52.6 | 35.4 | 51.7 | 57.8 | 57.0 | 49.8 | 55.1 |
| 87.5° | 10.8 | 13.8 | 24.3 | 18.8 | 15.8 | 9.7 | 19.4 | 22.7 | 28.5 | 11.6 | 10.5 |
| 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)