

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: P367398

Luminaire Tested: **MSA-SA2C-727-U-SL3**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P367398
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-18)
Test Lab: INNOVATION CENTER
Issue Date: 12/2/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: MSA-SA2C-727-U-SL3
Description: MESA POST TOP DECORATIVE LUMINAIRE. (2) 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: 10123 lumens
Efficiency: N/A
Efficacy: 89.6 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type III - Short
BUG Rating: B2 - U0 - G2

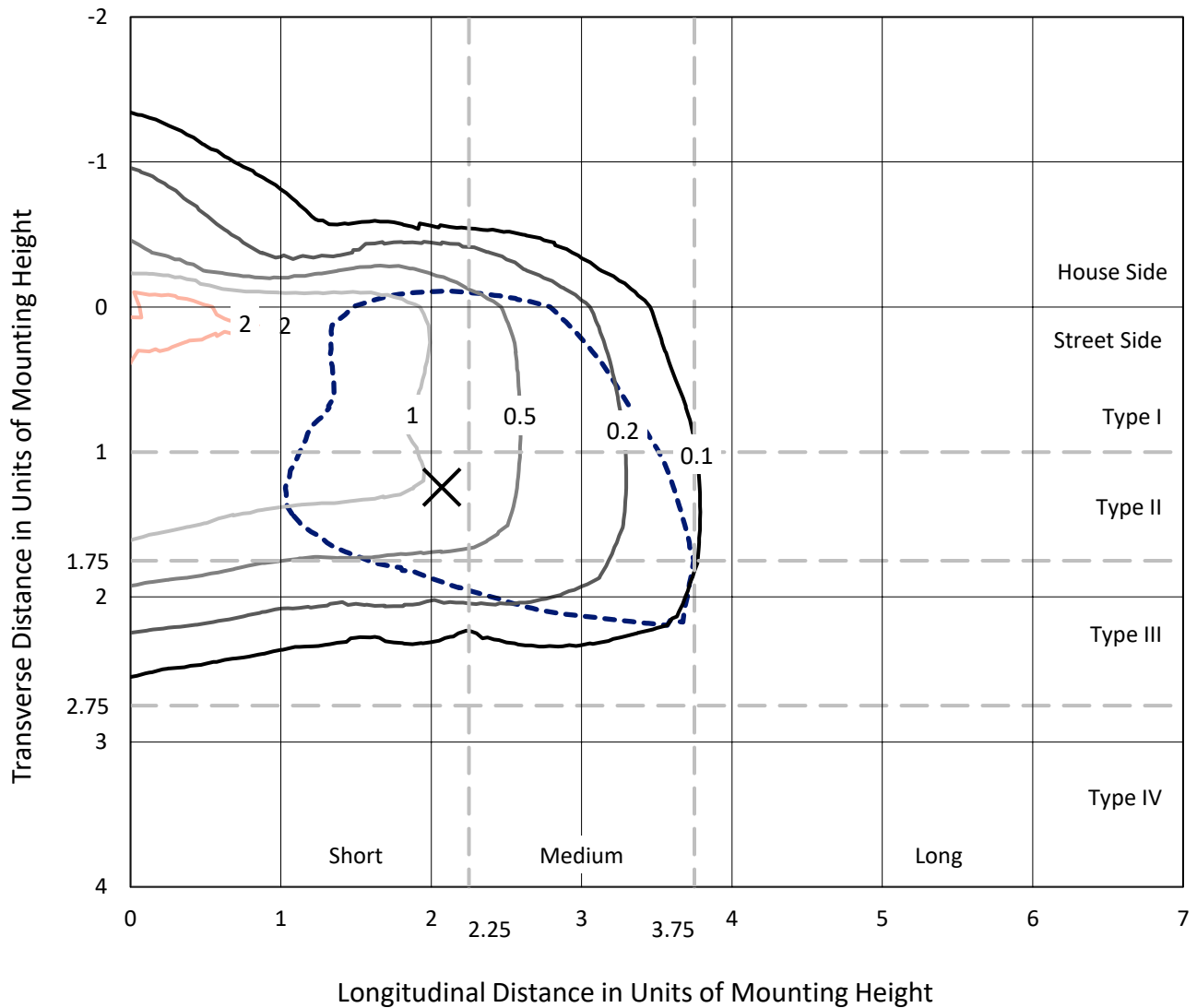
Input Watts (W): 113
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

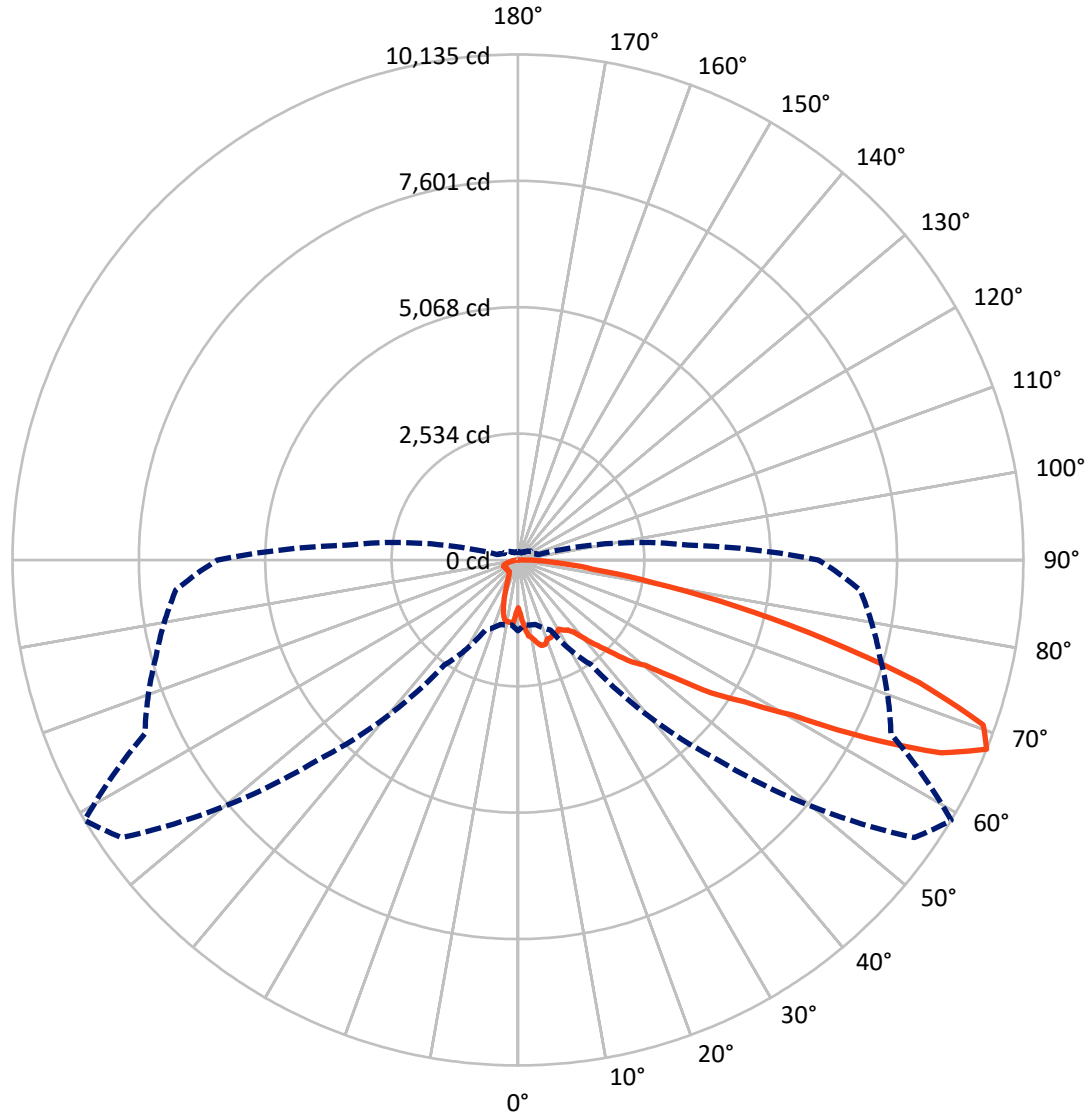
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 2.6 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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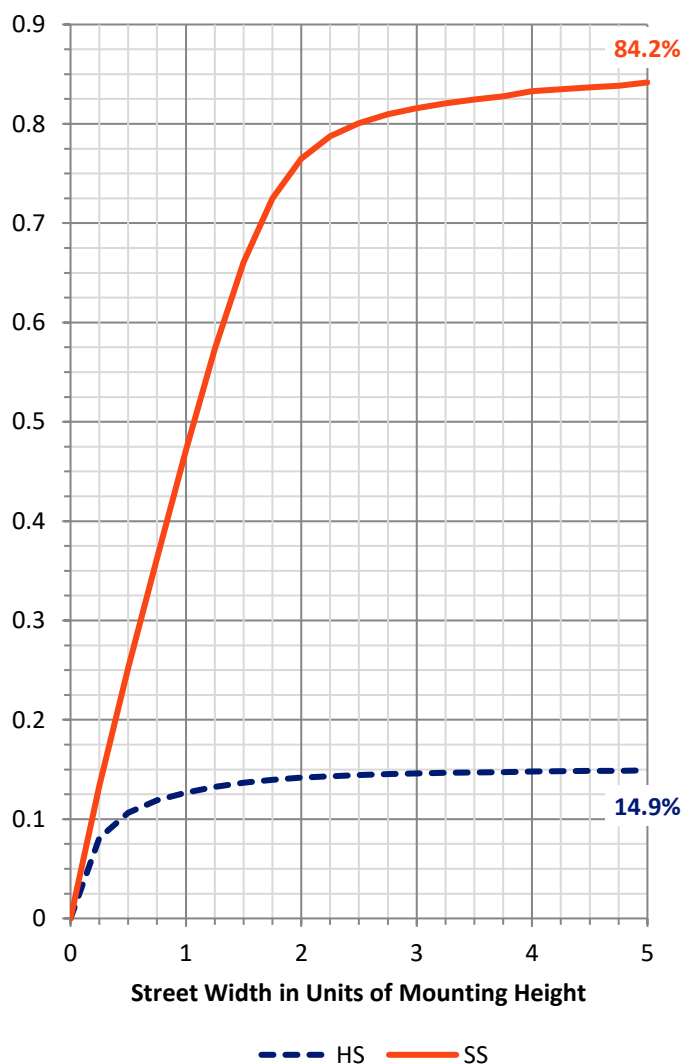
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 1523.7 | 0.0 | 1523.7 |
| | % Fixture | 15.1 | 0.0 | 15.1 |
| Street Side | Lumens | 8599.3 | 0.0 | 8599.3 |
| | % Fixture | 84.9 | 0.0 | 84.9 |
| Total | Lumens | 10123.0 | 0.0 | 10123.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 125.1 | 1.2 |
| 10°-20° | 370.2 | 3.7 |
| 20°-30° | 528.7 | 5.2 |
| 30°-40° | 779.1 | 7.7 |
| 40°-50° | 1316.3 | 13.0 |
| 50°-60° | 2290.6 | 22.6 |
| 60°-70° | 2918.9 | 28.8 |
| 70°-80° | 1545.6 | 15.3 |
| 80°-90° | 248.6 | 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° | 10123.0 | 100.0 |
| 0°-180° | 10123.0 | 100.0 |

Coefficient of Utilization

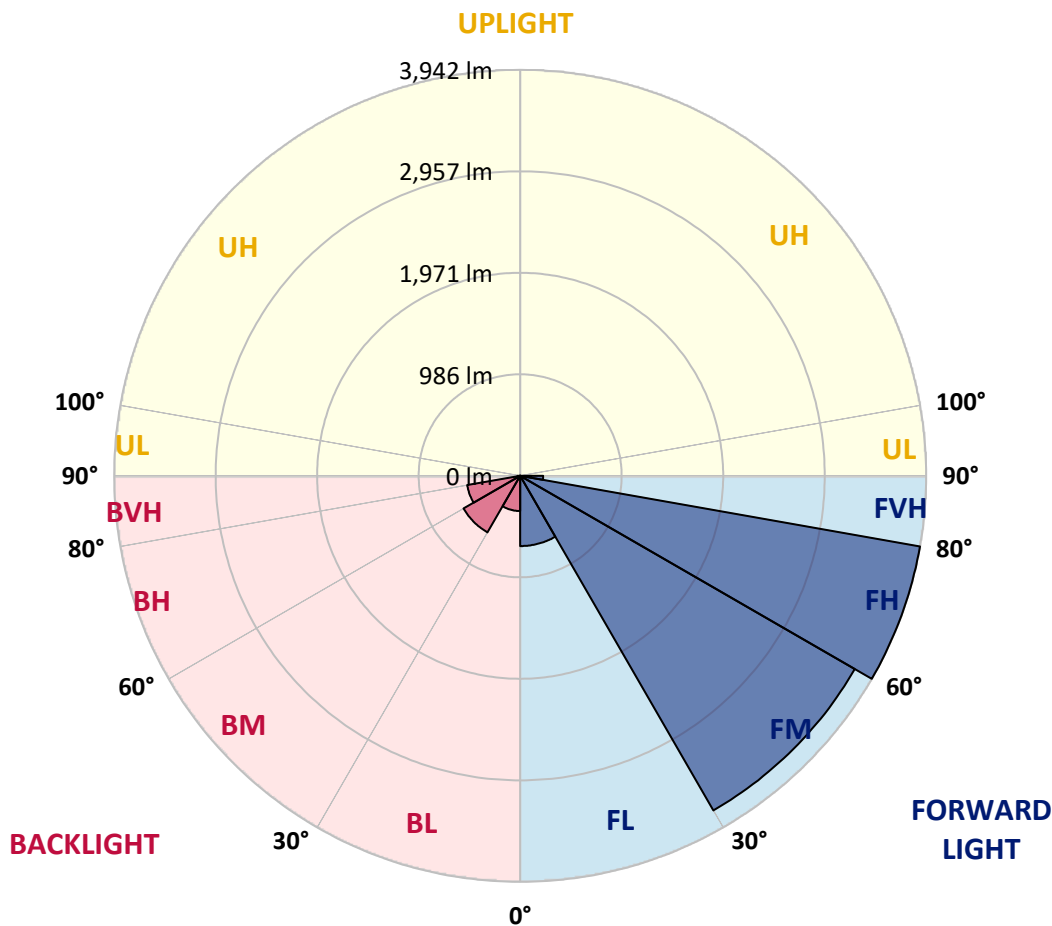


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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 682.3 | 6.7 | | | |
| FM (30°-60°) | 3751.4 | 37.1 | | | |
| FH (60°-80°) | 3942.2 | 38.9 | | | G2/5000 |
| FVH (80°-90°) | 223.3 | 2.2 | | | G2/225 |
| BL (0°-30°) | 341.7 | 3.4 | B1/500 | | |
| BM (30°-60°) | 634.5 | 6.3 | B1/1000 | | |
| BH (60°-80°) | 522.2 | 5.2 | B2/1000 | | G2/1000 |
| BVH (80°-90°) | 25.3 | 0.3 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B2-U0-G2
 Type III Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 59° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|---------|--------|--------|--------|
| 0° | 957.9 | 957.9 | 957.9 | 957.9 | 957.9 | 957.9 | 957.9 | 957.9 | 957.9 | 957.9 | 957.9 |
| 2.5° | 1196.0 | 1140.2 | 1081.0 | 1097.7 | 1131.6 | 1147.1 | 1130.4 | 1114.0 | 1093.0 | 1068.1 | 1153.1 |
| 5° | 1450.4 | 1367.6 | 1355.6 | 1355.1 | 1343.1 | 1295.1 | 1356.9 | 1352.6 | 1377.4 | 1403.2 | 1469.2 |
| 7.5° | 1522.9 | 1492.0 | 1458.5 | 1474.4 | 1413.9 | 1411.3 | 1507.4 | 1534.9 | 1582.9 | 1567.0 | 1655.8 |
| 10° | 1485.5 | 1450.8 | 1468.4 | 1461.9 | 1467.5 | 1531.0 | 1589.8 | 1591.5 | 1643.0 | 1693.6 | 1636.5 |
| 12.5° | 1419.9 | 1422.5 | 1492.4 | 1489.8 | 1579.9 | 1697.9 | 1715.5 | 1701.7 | 1785.8 | 1751.5 | 1800.4 |
| 15° | 1466.7 | 1498.0 | 1480.4 | 1495.4 | 1531.0 | 1681.2 | 1730.1 | 1779.8 | 1859.6 | 1890.5 | 1841.6 |
| 17.5° | 1541.3 | 1558.0 | 1479.1 | 1471.0 | 1544.3 | 1615.5 | 1736.9 | 1779.4 | 1791.8 | 2011.9 | 1942.8 |
| 20° | 1509.6 | 1543.5 | 1466.2 | 1367.1 | 1489.0 | 1583.3 | 1703.0 | 1690.2 | 1750.6 | 2021.3 | 1963.9 |
| 22.5° | 1599.7 | 1543.5 | 1445.2 | 1374.9 | 1417.8 | 1504.4 | 1606.1 | 1690.6 | 1762.2 | 1966.0 | 1994.3 |
| 25° | 1616.8 | 1590.2 | 1498.4 | 1428.5 | 1413.9 | 1444.8 | 1589.8 | 1645.1 | 1766.1 | 2041.5 | 1978.0 |
| 27.5° | 1721.5 | 1681.6 | 1494.6 | 1496.7 | 1424.2 | 1369.7 | 1538.3 | 1654.6 | 1809.8 | 1994.7 | 2017.9 |
| 30° | 1851.5 | 1821.0 | 1586.4 | 1594.9 | 1494.6 | 1394.2 | 1573.5 | 1608.7 | 1835.2 | 2067.7 | 2068.1 |
| 32.5° | 1948.8 | 2002.5 | 1767.0 | 1650.3 | 1614.7 | 1539.6 | 1519.4 | 1677.7 | 1805.6 | 2199.8 | 2153.9 |
| 35° | 2124.3 | 2165.9 | 1905.9 | 1812.4 | 1691.9 | 1607.4 | 1666.1 | 1723.2 | 1928.7 | 2373.5 | 2281.3 |
| 37.5° | 2449.0 | 2401.0 | 2164.2 | 2017.0 | 1972.0 | 1850.2 | 1882.8 | 1842.9 | 2062.5 | 2568.7 | 2531.0 |
| 40° | 2636.9 | 2595.3 | 2346.1 | 2264.6 | 2086.1 | 2101.6 | 2060.8 | 2090.0 | 2241.4 | 2776.3 | 2764.3 |
| 42.5° | 2822.2 | 2766.5 | 2555.8 | 2499.2 | 2321.2 | 2245.7 | 2253.0 | 2347.4 | 2517.2 | 3111.8 | 3071.9 |
| 45° | 3005.4 | 2862.6 | 2770.3 | 2785.3 | 2699.5 | 2544.7 | 2555.4 | 2644.2 | 2818.4 | 3495.3 | 3403.5 |
| 47.5° | 3145.7 | 3027.7 | 2955.6 | 2937.2 | 2894.7 | 3101.9 | 3009.3 | 3045.3 | 3122.1 | 3836.8 | 3802.0 |
| 50° | 3411.2 | 3273.5 | 3179.6 | 3153.0 | 3297.1 | 3585.4 | 3396.6 | 3319.0 | 3482.4 | 4278.2 | 4260.2 |
| 52.5° | 3836.3 | 3664.7 | 3508.2 | 3506.4 | 3714.9 | 3902.0 | 4034.9 | 3901.1 | 3961.2 | 4730.3 | 4781.8 |
| 55° | 4207.4 | 4008.8 | 3868.1 | 3945.7 | 4242.6 | 4357.1 | 4808.8 | 4704.1 | 4653.5 | 5186.7 | 5333.9 |
| 57.5° | 4346.0 | 4113.9 | 4022.1 | 4136.6 | 4574.2 | 5162.7 | 5640.2 | 5364.8 | 5315.4 | 5703.2 | 6011.7 |
| 60° | 4041.8 | 3796.4 | 3802.0 | 4017.8 | 4775.8 | 5754.3 | 6549.2 | 6315.4 | 6026.3 | 6346.3 | 6647.4 |
| 62.5° | 3175.3 | 2953.5 | 3098.1 | 3426.2 | 4606.8 | 6329.1 | 7767.5 | 7866.1 | 6838.3 | 6879.5 | 7000.0 |
| 65° | 2158.2 | 2004.6 | 2135.0 | 2456.3 | 3736.4 | 6642.7 | 8927.8 | 9323.4 | 7577.9 | 7228.7 | 7152.3 |
| 67.5° | 1420.3 | 1311.8 | 1337.1 | 1550.7 | 2572.1 | 5662.9 | 9703.9 | 10135.0 | 8253.9 | 7515.2 | 6883.8 |
| 70° | 1099.9 | 1012.4 | 1001.2 | 1113.2 | 1525.4 | 3934.1 | 9244.0 | 9899.5 | 8665.7 | 7246.7 | 6000.1 |
| 72.5° | 863.1 | 796.6 | 802.6 | 910.3 | 1181.4 | 2182.6 | 7153.2 | 8418.2 | 8045.4 | 6249.7 | 4609.8 |
| 75° | 673.1 | 618.6 | 649.0 | 772.2 | 1092.6 | 1356.4 | 4935.4 | 6389.2 | 6220.1 | 4627.8 | 2629.2 |
| 77.5° | 488.6 | 453.4 | 496.8 | 657.6 | 1027.0 | 1163.8 | 3072.3 | 4457.5 | 3984.8 | 2376.1 | 902.1 |
| 80° | 320.4 | 300.7 | 336.3 | 536.2 | 931.3 | 1120.1 | 1898.6 | 2731.3 | 1969.0 | 667.5 | 341.5 |
| 82.5° | 188.7 | 180.2 | 209.8 | 362.9 | 748.6 | 1049.7 | 1266.3 | 1517.7 | 805.6 | 282.3 | 181.5 |
| 85° | 99.1 | 92.7 | 124.4 | 208.5 | 516.1 | 958.3 | 996.9 | 908.6 | 389.1 | 122.7 | 86.7 |
| 87.5° | 33.0 | 32.2 | 52.8 | 80.6 | 195.2 | 508.8 | 531.9 | 431.5 | 160.4 | 35.6 | 18.9 |
| 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° | 957.9 | 957.9 | 957.9 | 957.9 | 957.9 | 957.9 | 957.9 | 957.9 | 957.9 | 957.9 | 957.9 |
| 2.5° | 1164.7 | 1147.5 | 1048.8 | 1062.6 | 1075.4 | 1069.0 | 1065.1 | 1020.5 | 1016.2 | 1079.7 | 1074.6 |
| 5° | 1467.5 | 1396.3 | 1312.2 | 1308.4 | 1253.0 | 1196.4 | 1207.6 | 1189.5 | 1194.7 | 1220.9 | 1223.4 |
| 7.5° | 1627.5 | 1538.7 | 1458.5 | 1328.1 | 1217.4 | 1127.8 | 1141.9 | 1137.6 | 1126.1 | 1185.3 | 1201.1 |
| 10° | 1624.5 | 1545.6 | 1455.1 | 1297.2 | 1222.6 | 1149.7 | 1062.1 | 979.4 | 954.9 | 925.7 | 928.3 |
| 12.5° | 1731.8 | 1661.9 | 1464.5 | 1303.7 | 1202.4 | 1076.7 | 912.9 | 822.3 | 735.7 | 734.0 | 712.1 |
| 15° | 1765.2 | 1713.8 | 1484.7 | 1266.8 | 1061.3 | 881.1 | 711.7 | 613.4 | 550.8 | 538.4 | 519.9 |
| 17.5° | 1849.7 | 1769.1 | 1423.3 | 1147.5 | 897.4 | 688.9 | 534.9 | 466.3 | 461.1 | 469.7 | 460.3 |
| 20° | 1855.3 | 1724.5 | 1312.7 | 971.2 | 721.1 | 522.1 | 436.3 | 402.0 | 420.4 | 441.4 | 440.6 |
| 22.5° | 1850.6 | 1668.3 | 1217.0 | 821.1 | 541.8 | 419.5 | 382.2 | 374.5 | 391.7 | 423.0 | 426.8 |
| 25° | 1802.6 | 1649.8 | 1097.3 | 674.3 | 439.7 | 359.5 | 349.2 | 353.9 | 375.4 | 412.2 | 412.2 |
| 27.5° | 1852.7 | 1574.8 | 947.2 | 548.7 | 369.8 | 320.0 | 327.3 | 339.3 | 355.2 | 397.2 | 405.0 |
| 30° | 1836.4 | 1599.7 | 826.2 | 441.8 | 326.0 | 292.6 | 308.9 | 320.9 | 338.9 | 382.6 | 386.5 |
| 32.5° | 1880.2 | 1533.2 | 724.5 | 371.5 | 297.3 | 281.8 | 285.7 | 302.0 | 325.6 | 359.9 | 366.8 |
| 35° | 1947.1 | 1557.6 | 607.9 | 334.2 | 283.1 | 269.4 | 276.7 | 289.6 | 313.2 | 346.6 | 352.2 |
| 37.5° | 2160.8 | 1556.3 | 527.2 | 313.6 | 280.6 | 266.8 | 270.3 | 279.3 | 306.7 | 337.2 | 350.0 |
| 40° | 2298.0 | 1645.6 | 453.9 | 308.9 | 277.5 | 265.5 | 262.5 | 272.4 | 294.3 | 330.3 | 339.3 |
| 42.5° | 2555.8 | 1700.0 | 422.1 | 307.1 | 277.1 | 258.2 | 255.2 | 266.8 | 288.3 | 321.7 | 335.5 |
| 45° | 2828.2 | 1777.7 | 396.8 | 306.3 | 275.8 | 257.0 | 247.9 | 262.5 | 280.6 | 312.7 | 328.6 |
| 47.5° | 3148.7 | 1942.0 | 382.6 | 303.3 | 273.3 | 258.7 | 245.4 | 252.7 | 272.8 | 305.0 | 320.9 |
| 50° | 3568.2 | 2159.5 | 385.6 | 299.0 | 277.1 | 259.1 | 241.5 | 244.9 | 263.4 | 294.7 | 311.0 |
| 52.5° | 4078.3 | 2496.2 | 405.0 | 300.7 | 279.7 | 257.0 | 239.8 | 238.1 | 254.0 | 281.4 | 297.7 |
| 55° | 4693.0 | 2974.1 | 462.9 | 308.9 | 279.7 | 256.5 | 237.2 | 229.5 | 241.5 | 263.8 | 279.7 |
| 57.5° | 5434.7 | 3527.5 | 576.1 | 312.7 | 277.5 | 254.0 | 231.6 | 217.9 | 225.2 | 243.7 | 258.7 |
| 60° | 6071.7 | 3974.0 | 692.8 | 315.3 | 281.8 | 247.9 | 220.5 | 203.3 | 208.1 | 222.2 | 235.5 |
| 62.5° | 6396.5 | 4099.3 | 728.0 | 313.2 | 293.4 | 244.1 | 207.2 | 187.9 | 188.3 | 200.3 | 212.3 |
| 65° | 6457.4 | 3932.4 | 586.8 | 311.0 | 308.4 | 243.7 | 197.8 | 174.6 | 171.6 | 180.2 | 190.5 |
| 67.5° | 6023.2 | 3413.4 | 423.4 | 306.3 | 310.1 | 241.1 | 191.3 | 163.9 | 156.1 | 162.2 | 170.7 |
| 70° | 5114.2 | 2748.9 | 355.6 | 296.9 | 289.6 | 228.2 | 180.2 | 152.7 | 142.4 | 146.7 | 153.1 |
| 72.5° | 3812.7 | 2033.8 | 310.1 | 276.7 | 252.2 | 195.2 | 163.0 | 140.3 | 129.6 | 132.6 | 137.3 |
| 75° | 2118.3 | 1084.9 | 259.5 | 240.7 | 205.9 | 157.9 | 139.0 | 124.4 | 115.0 | 116.3 | 121.4 |
| 77.5° | 703.5 | 400.2 | 190.5 | 190.9 | 155.7 | 121.8 | 114.5 | 106.4 | 99.1 | 99.5 | 103.8 |
| 80° | 318.7 | 221.4 | 136.4 | 137.3 | 108.5 | 88.4 | 87.9 | 85.4 | 80.6 | 79.4 | 82.4 |
| 82.5° | 184.9 | 134.3 | 93.5 | 89.2 | 69.9 | 57.5 | 63.9 | 62.6 | 61.3 | 56.6 | 57.5 |
| 85° | 90.9 | 72.1 | 48.9 | 46.3 | 38.6 | 28.7 | 34.3 | 35.6 | 34.3 | 29.2 | 28.7 |
| 87.5° | 22.3 | 23.6 | 12.0 | 11.2 | 6.4 | 3.0 | 5.1 | 5.1 | 6.4 | 4.3 | 2.1 |
| 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)