

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: P367923

Luminaire Tested: **MSA-SA3C-727-U-SL2-HSS**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P367923
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-17)
Test Lab: INNOVATION CENTER
Issue Date: 12/2/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: MSA-SA3C-727-U-SL2-HSS
Description: MESA POST TOP DECORATIVE LUMINAIRE. (3) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II SPILL LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 12479 lumens
Efficiency: N/A
Efficacy: 75.2 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type II - Short
BUG Rating: B2 - U0 - G2

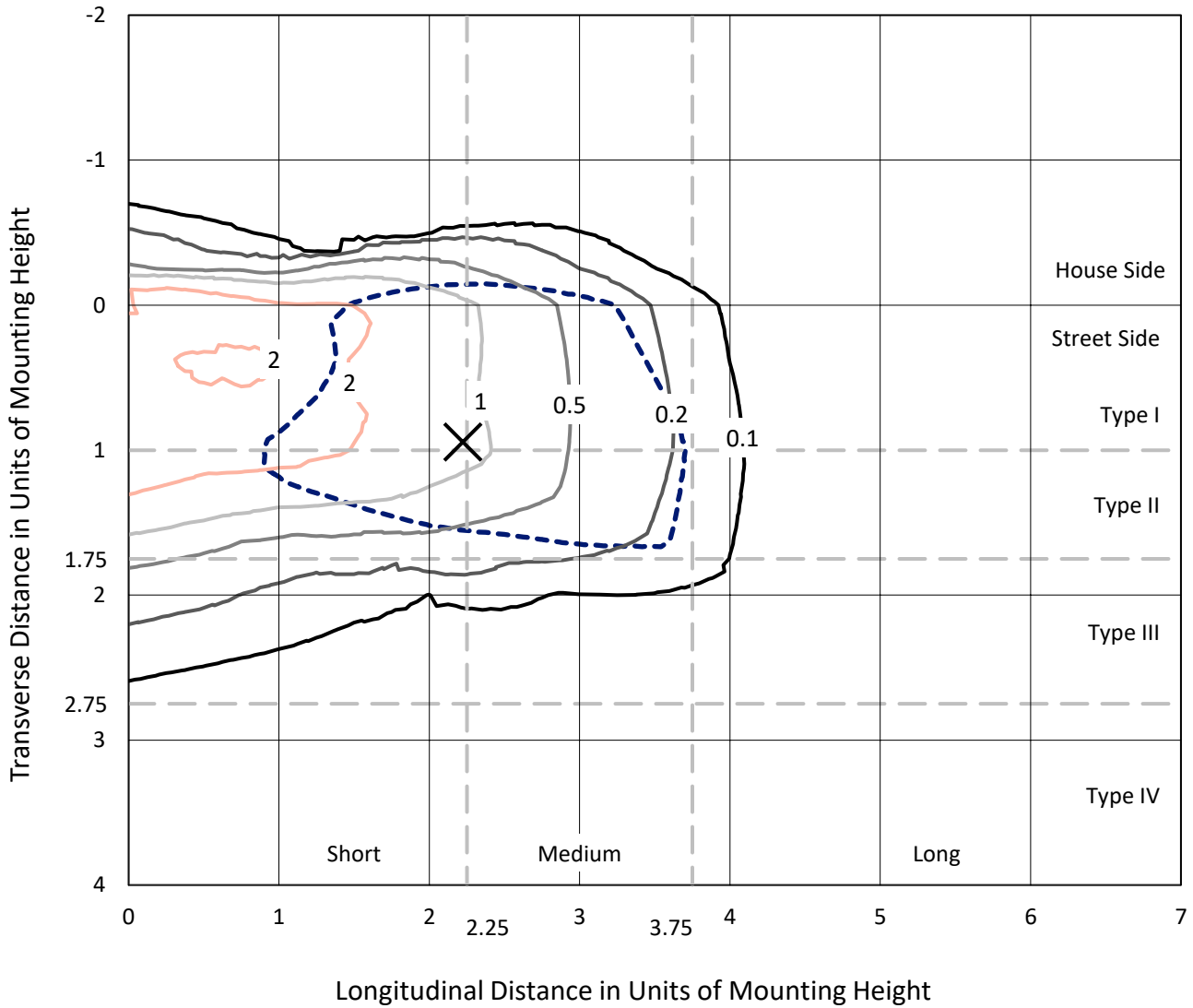
Input Watts (W): 166
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

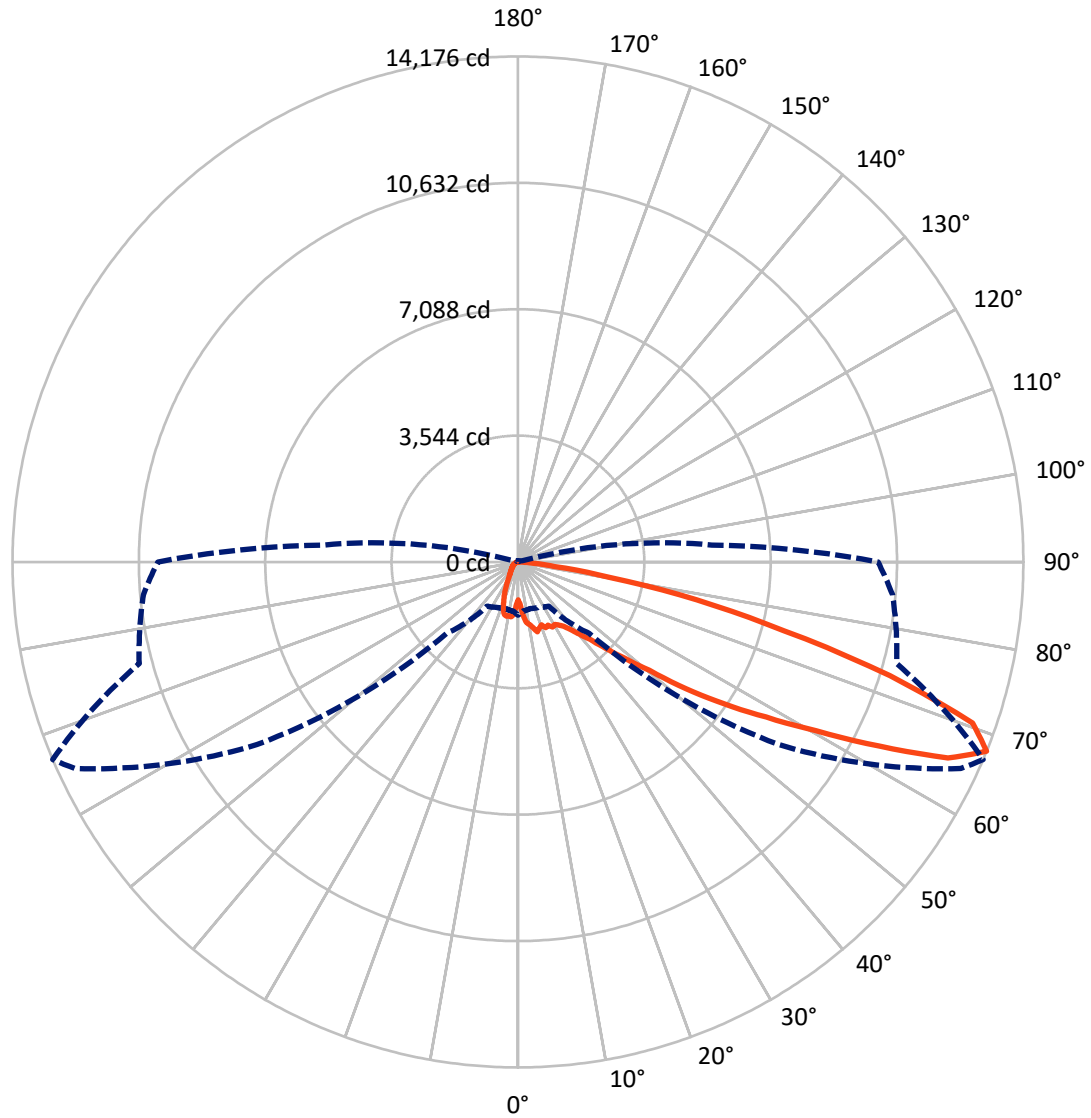
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 3.3 fc
 Type II - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 67-Deg Lateral - - - Horizontal Cone Through 67.5-Deg Vertical

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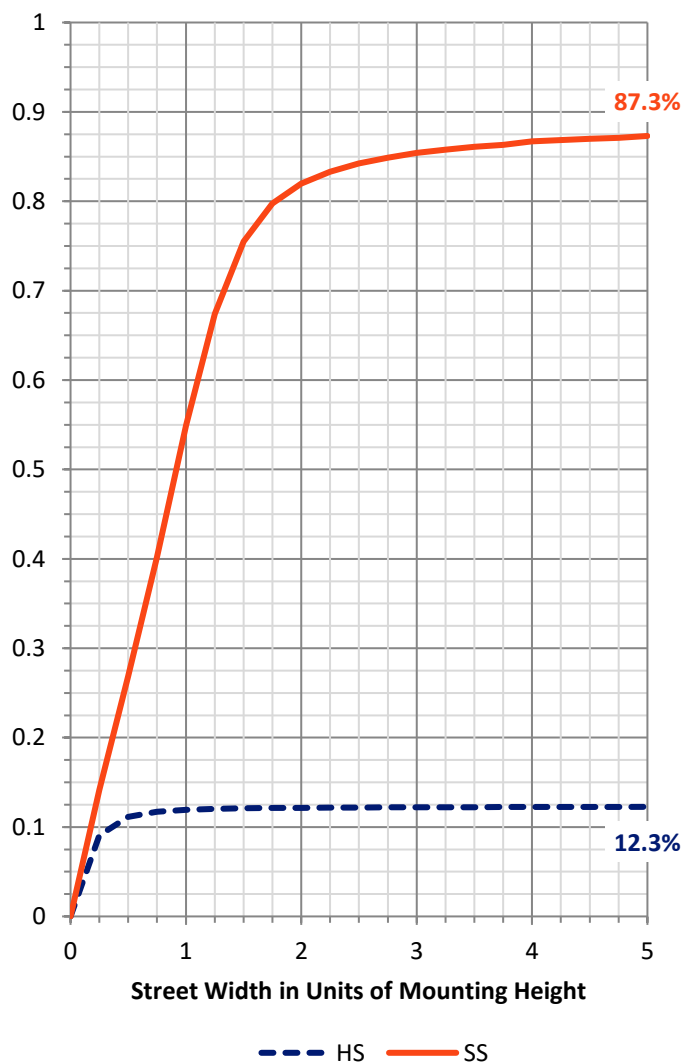
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 1543.3 | 0.0 | 1543.3 |
| | % Fixture | 12.4 | 0.0 | 12.4 |
| Street Side | Lumens | 10935.7 | 0.0 | 10935.7 |
| | % Fixture | 87.6 | 0.0 | 87.6 |
| Total | Lumens | 12479.0 | 0.0 | 12479.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 133.4 | 1.1 |
| 10°-20° | 394.8 | 3.2 |
| 20°-30° | 618.7 | 5.0 |
| 30°-40° | 997.5 | 8.0 |
| 40°-50° | 1833.0 | 14.7 |
| 50°-60° | 3095.7 | 24.8 |
| 60°-70° | 3422.4 | 27.4 |
| 70°-80° | 1791.3 | 14.4 |
| 80°-90° | 192.4 | 1.5 |
| 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° | 12479.0 | 100.0 |
| 0°-180° | 12479.0 | 100.0 |

Coefficient of Utilization



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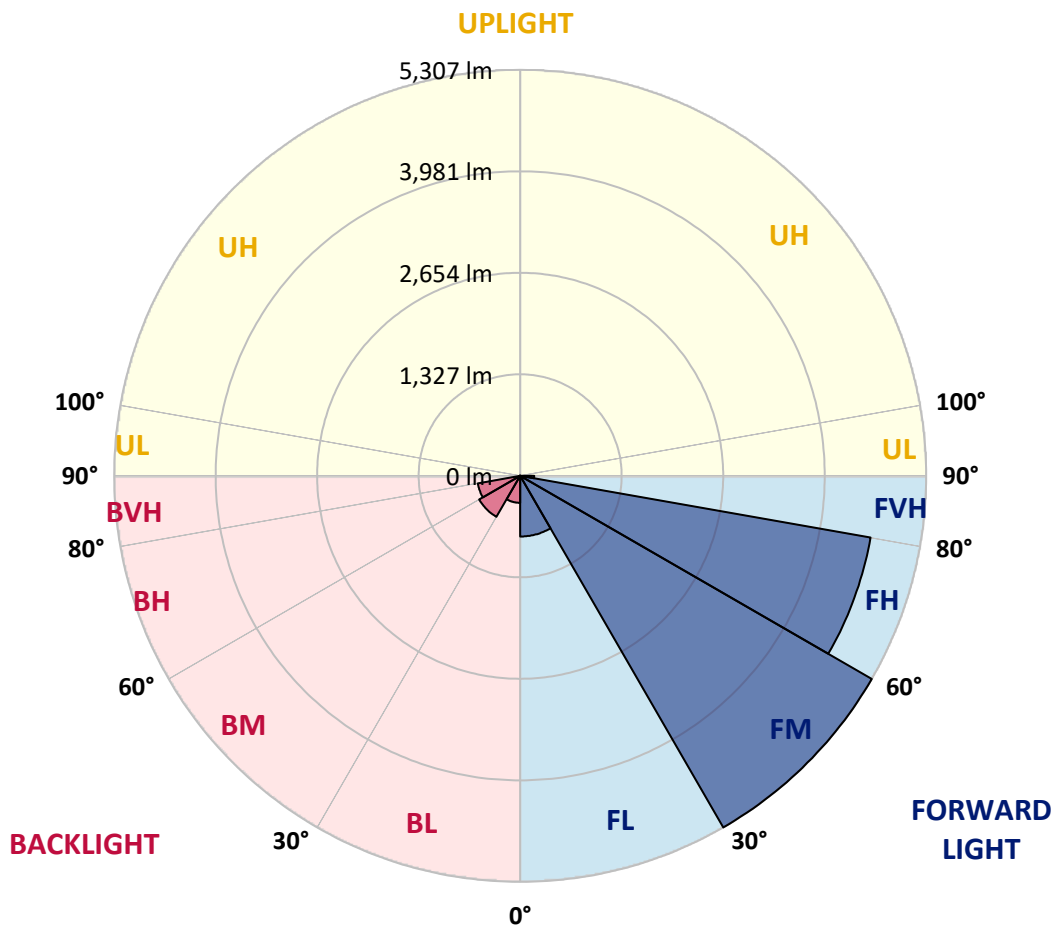
CATALOG NUMBER: MSA-SA3C-727-U-SL2-HSS

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 793.5 | 6.4 | | | |
| FM (30°-60°) | 5307.4 | 42.5 | | | |
| FH (60°-80°) | 4650.7 | 37.3 | | | G2/5000 |
| FVH (80°-90°) | 184.2 | 1.5 | | | G2/225 |
| BL (0°-30°) | 353.4 | 2.8 | B1/500 | | |
| BM (30°-60°) | 618.8 | 5.0 | B1/1000 | | |
| BH (60°-80°) | 562.9 | 4.5 | B2/1000 | | G2/1000 |
| BVH (80°-90°) | 8.2 | 0.1 | | | G0/10 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B2-U0-G2

Type II Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 67° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|
| 0° | 1062.9 | 1062.9 | 1062.9 | 1062.9 | 1062.9 | 1062.9 | 1062.9 | 1062.9 | 1062.9 | 1062.9 | 1062.9 |
| 2.5° | 1254.7 | 1212.3 | 1140.1 | 1161.0 | 1202.8 | 1237.6 | 1221.1 | 1188.8 | 1189.5 | 1156.5 | 1274.9 |
| 5° | 1459.8 | 1402.8 | 1361.0 | 1375.6 | 1373.7 | 1372.4 | 1450.3 | 1480.0 | 1492.7 | 1547.1 | 1627.5 |
| 7.5° | 1518.6 | 1498.4 | 1454.7 | 1468.0 | 1424.3 | 1427.5 | 1564.2 | 1693.4 | 1713.6 | 1747.2 | 1890.2 |
| 10° | 1495.9 | 1456.6 | 1472.4 | 1472.4 | 1473.1 | 1544.0 | 1635.8 | 1759.2 | 1783.9 | 1913.0 | 1928.2 |
| 12.5° | 1471.2 | 1473.1 | 1535.7 | 1524.3 | 1610.4 | 1737.7 | 1768.7 | 1907.3 | 1895.3 | 2007.3 | 2173.8 |
| 15° | 1563.0 | 1611.1 | 1570.6 | 1586.4 | 1594.6 | 1744.0 | 1794.0 | 1978.2 | 2031.4 | 2173.2 | 2281.4 |
| 17.5° | 1720.6 | 1726.9 | 1642.7 | 1619.9 | 1679.4 | 1721.8 | 1822.5 | 1911.1 | 1946.6 | 2318.8 | 2472.0 |
| 20° | 1749.1 | 1789.6 | 1704.1 | 1572.5 | 1698.4 | 1756.7 | 1826.9 | 1869.3 | 1884.5 | 2363.7 | 2579.6 |
| 22.5° | 1920.6 | 1875.7 | 1738.9 | 1638.9 | 1675.0 | 1738.3 | 1782.0 | 1909.9 | 2001.0 | 2278.9 | 2682.8 |
| 25° | 2008.6 | 1996.6 | 1866.2 | 1780.7 | 1744.0 | 1738.9 | 1839.0 | 1935.8 | 1964.9 | 2366.9 | 2708.1 |
| 27.5° | 2219.4 | 2192.2 | 1939.6 | 1928.8 | 1807.9 | 1701.6 | 1840.9 | 2014.9 | 2069.4 | 2284.0 | 2803.1 |
| 30° | 2506.2 | 2496.0 | 2159.9 | 2152.9 | 1960.5 | 1769.3 | 1943.4 | 2063.7 | 2030.8 | 2326.4 | 2866.4 |
| 32.5° | 2794.8 | 2877.1 | 2533.4 | 2337.2 | 2192.8 | 2018.1 | 1914.3 | 2048.5 | 2107.4 | 2429.6 | 2982.8 |
| 35° | 3143.6 | 3203.1 | 2853.1 | 2710.6 | 2389.7 | 2134.6 | 2107.4 | 2193.5 | 2218.8 | 2552.4 | 3115.2 |
| 37.5° | 3753.9 | 3664.0 | 3365.8 | 3123.4 | 2955.0 | 2550.5 | 2416.3 | 2347.9 | 2406.8 | 2718.9 | 3385.5 |
| 40° | 4204.6 | 4147.6 | 3780.5 | 3635.5 | 3248.1 | 3011.3 | 2660.6 | 2596.7 | 2662.5 | 2889.8 | 3573.5 |
| 42.5° | 4748.4 | 4630.0 | 4284.4 | 4186.2 | 3787.4 | 3331.0 | 2975.3 | 2997.4 | 2956.3 | 3227.2 | 3903.3 |
| 45° | 5240.2 | 4973.1 | 4780.7 | 4802.8 | 4590.1 | 3973.5 | 3500.0 | 3489.3 | 3455.1 | 3715.9 | 4250.2 |
| 47.5° | 5571.3 | 5337.7 | 5150.3 | 5088.9 | 5063.6 | 5103.5 | 4258.4 | 4067.2 | 4041.9 | 4229.3 | 4796.5 |
| 50° | 5749.2 | 5493.5 | 5261.8 | 5274.4 | 5788.4 | 6175.2 | 5040.8 | 4769.3 | 4778.8 | 4974.4 | 5543.5 |
| 52.5° | 5629.6 | 5340.3 | 5095.9 | 5333.3 | 6350.6 | 6889.9 | 6336.0 | 5686.5 | 5906.8 | 5856.8 | 6545.6 |
| 55° | 5076.9 | 4825.6 | 4652.2 | 5076.9 | 6412.0 | 7659.1 | 7930.6 | 7067.2 | 7017.8 | 6903.8 | 7567.3 |
| 57.5° | 4147.0 | 3930.5 | 3823.5 | 4271.7 | 5740.3 | 8278.8 | 9532.2 | 8627.6 | 8206.6 | 7729.3 | 8415.5 |
| 60° | 3089.8 | 2930.3 | 2818.9 | 3055.6 | 4523.0 | 7676.8 | 10581.1 | 10098.1 | 9610.7 | 8525.0 | 9177.7 |
| 62.5° | 2288.4 | 2158.6 | 2040.3 | 2061.8 | 3114.5 | 6602.5 | 10983.7 | 11656.0 | 11376.2 | 9365.1 | 9896.8 |
| 65° | 1826.3 | 1707.9 | 1625.0 | 1577.5 | 1928.8 | 4967.4 | 10423.5 | 12932.8 | 13255.7 | 10156.4 | 10415.9 |
| 67.5° | 1491.4 | 1391.4 | 1350.3 | 1404.7 | 1512.9 | 2831.6 | 8927.0 | 13707.7 | 14176.1 | 10995.8 | 10543.8 |
| 70° | 1213.5 | 1131.2 | 1126.8 | 1273.7 | 1393.3 | 1726.3 | 6566.4 | 13172.8 | 13525.4 | 11138.8 | 9777.2 |
| 72.5° | 845.7 | 809.6 | 867.3 | 1075.5 | 1380.6 | 1437.6 | 3771.0 | 10900.8 | 10913.5 | 9838.0 | 8042.0 |
| 75° | 478.6 | 472.9 | 564.0 | 857.8 | 1344.6 | 1423.1 | 2102.3 | 7703.4 | 7709.1 | 7440.7 | 5571.3 |
| 77.5° | 263.3 | 246.2 | 328.5 | 579.9 | 1154.7 | 1390.1 | 1356.0 | 5259.9 | 5125.0 | 4140.7 | 2544.8 |
| 80° | 121.5 | 114.6 | 177.9 | 371.6 | 844.5 | 1314.8 | 1086.9 | 2891.1 | 2606.8 | 1349.0 | 621.0 |
| 82.5° | 50.0 | 47.5 | 81.7 | 238.7 | 533.6 | 1059.1 | 916.0 | 1282.5 | 1029.3 | 256.4 | 191.8 |
| 85° | 8.9 | 9.5 | 33.6 | 144.3 | 298.8 | 488.1 | 742.5 | 609.0 | 447.6 | 70.9 | 105.1 |
| 87.5° | 0.0 | 0.0 | 7.0 | 34.8 | 72.2 | 133.6 | 301.3 | 170.3 | 117.1 | 20.9 | 31.0 |
| 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):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1062.9 | 1062.9 | 1062.9 | 1062.9 | 1062.9 | 1062.9 | 1062.9 | 1062.9 | 1062.9 | 1062.9 | 1062.9 |
| 2.5° | 1298.3 | 1287.6 | 1178.7 | 1183.8 | 1191.4 | 1184.4 | 1183.1 | 1152.8 | 1124.9 | 1216.7 | 1215.4 |
| 5° | 1642.1 | 1565.5 | 1490.2 | 1461.0 | 1398.4 | 1316.1 | 1316.7 | 1290.8 | 1264.2 | 1301.5 | 1301.5 |
| 7.5° | 1887.1 | 1781.4 | 1685.8 | 1515.5 | 1349.6 | 1199.6 | 1186.3 | 1150.9 | 1110.3 | 1159.1 | 1168.6 |
| 10° | 1944.0 | 1852.3 | 1728.8 | 1478.8 | 1321.8 | 1175.5 | 1014.8 | 882.4 | 821.0 | 792.6 | 787.5 |
| 12.5° | 2119.4 | 2051.0 | 1775.0 | 1498.4 | 1272.4 | 1024.9 | 761.5 | 604.5 | 497.6 | 489.3 | 477.9 |
| 15° | 2236.5 | 2188.4 | 1820.6 | 1449.6 | 1063.5 | 736.8 | 478.6 | 367.2 | 324.1 | 320.3 | 314.6 |
| 17.5° | 2418.2 | 2334.6 | 1776.9 | 1294.6 | 831.8 | 486.2 | 321.6 | 289.9 | 295.0 | 306.4 | 297.5 |
| 20° | 2492.2 | 2328.9 | 1682.0 | 1069.8 | 584.3 | 326.0 | 279.2 | 262.1 | 275.4 | 286.1 | 281.1 |
| 22.5° | 2568.2 | 2345.4 | 1597.8 | 881.8 | 381.7 | 269.7 | 248.8 | 239.9 | 241.2 | 251.9 | 252.6 |
| 25° | 2567.6 | 2391.0 | 1500.3 | 686.8 | 284.2 | 239.9 | 224.7 | 213.3 | 208.9 | 216.5 | 214.6 |
| 27.5° | 2692.3 | 2338.4 | 1322.4 | 509.6 | 250.0 | 214.6 | 200.0 | 186.1 | 170.3 | 177.9 | 177.9 |
| 30° | 2692.9 | 2423.9 | 1198.3 | 365.9 | 229.2 | 191.2 | 178.5 | 157.0 | 138.6 | 145.0 | 145.6 |
| 32.5° | 2764.5 | 2349.8 | 1083.8 | 279.8 | 212.7 | 177.2 | 149.4 | 129.8 | 119.0 | 122.8 | 122.8 |
| 35° | 2846.1 | 2413.1 | 907.8 | 246.9 | 196.2 | 157.6 | 127.9 | 112.0 | 103.8 | 107.0 | 107.0 |
| 37.5° | 3115.8 | 2399.8 | 785.6 | 229.8 | 185.5 | 142.4 | 116.5 | 98.8 | 95.0 | 96.9 | 99.4 |
| 40° | 3213.3 | 2494.1 | 619.7 | 219.7 | 167.8 | 128.5 | 102.6 | 89.3 | 84.2 | 85.5 | 86.1 |
| 42.5° | 3461.4 | 2515.0 | 495.0 | 211.4 | 151.9 | 111.4 | 91.2 | 81.7 | 75.3 | 75.3 | 77.2 |
| 45° | 3735.5 | 2567.6 | 393.7 | 204.5 | 138.6 | 100.0 | 82.3 | 74.7 | 65.2 | 63.9 | 66.5 |
| 47.5° | 4132.4 | 2768.9 | 320.9 | 190.5 | 122.8 | 93.1 | 76.0 | 64.6 | 57.0 | 54.4 | 57.0 |
| 50° | 4796.5 | 3110.7 | 283.6 | 173.5 | 111.4 | 87.4 | 67.1 | 55.1 | 49.4 | 46.2 | 48.1 |
| 52.5° | 5733.4 | 3701.3 | 264.0 | 157.6 | 101.3 | 78.5 | 60.1 | 48.1 | 42.4 | 39.9 | 41.1 |
| 55° | 6774.1 | 4378.7 | 254.5 | 141.8 | 92.4 | 69.0 | 52.5 | 42.4 | 37.3 | 34.2 | 34.8 |
| 57.5° | 7736.3 | 5015.5 | 245.0 | 126.6 | 83.6 | 61.4 | 46.2 | 37.3 | 32.3 | 29.1 | 29.8 |
| 60° | 8684.6 | 5523.8 | 222.2 | 108.9 | 75.3 | 55.1 | 40.5 | 32.3 | 29.1 | 25.3 | 25.3 |
| 62.5° | 9523.3 | 5827.7 | 189.3 | 94.3 | 67.7 | 48.7 | 36.1 | 29.1 | 26.6 | 22.8 | 22.8 |
| 65° | 10094.3 | 5841.6 | 152.6 | 81.0 | 59.5 | 41.8 | 31.7 | 27.2 | 24.7 | 20.3 | 19.6 |
| 67.5° | 10102.6 | 5461.8 | 122.2 | 72.2 | 52.5 | 36.7 | 28.5 | 26.0 | 22.8 | 19.0 | 17.7 |
| 70° | 9042.2 | 4512.3 | 101.9 | 63.3 | 45.6 | 32.3 | 24.7 | 24.7 | 22.2 | 18.4 | 16.5 |
| 72.5° | 7233.0 | 3448.1 | 85.5 | 55.1 | 40.5 | 27.9 | 22.8 | 23.4 | 21.5 | 18.4 | 16.5 |
| 75° | 4861.7 | 1977.6 | 70.9 | 46.8 | 35.4 | 23.4 | 22.2 | 22.8 | 22.2 | 18.4 | 15.8 |
| 77.5° | 2239.0 | 629.9 | 55.1 | 38.6 | 30.4 | 19.6 | 21.5 | 21.5 | 20.3 | 16.5 | 13.9 |
| 80° | 504.5 | 155.1 | 39.9 | 28.5 | 24.7 | 14.6 | 19.6 | 17.7 | 15.8 | 11.4 | 8.2 |
| 82.5° | 183.6 | 47.5 | 24.1 | 17.7 | 15.2 | 5.7 | 12.7 | 12.7 | 11.4 | 8.2 | 5.1 |
| 85° | 105.1 | 24.7 | 13.3 | 11.4 | 8.2 | 2.5 | 7.0 | 7.6 | 6.3 | 5.7 | 2.5 |
| 87.5° | 34.2 | 5.7 | 6.3 | 7.0 | 6.3 | 1.3 | 2.5 | 2.5 | 1.9 | 1.3 | 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)