

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: P596767

Luminaire Tested: **MSA-SA4B-827-U-SL3-HSS**

Issue Date: 5/27/2021

Test Information

Test Method: LM-79-08
Report Number: P596767
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-19)
Test Lab: INNOVATIONS CENTER
Issue Date: 5/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: MSA-SA4B-827-U-SL3-HSS
Description: MESA POST TOP DECORATIVE LUMINAIRE. (4) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III SPILL LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 11728 lumens
Efficiency: N/A
Efficacy: 68.6 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type III - Short
BUG Rating: B1 - U0 - G2

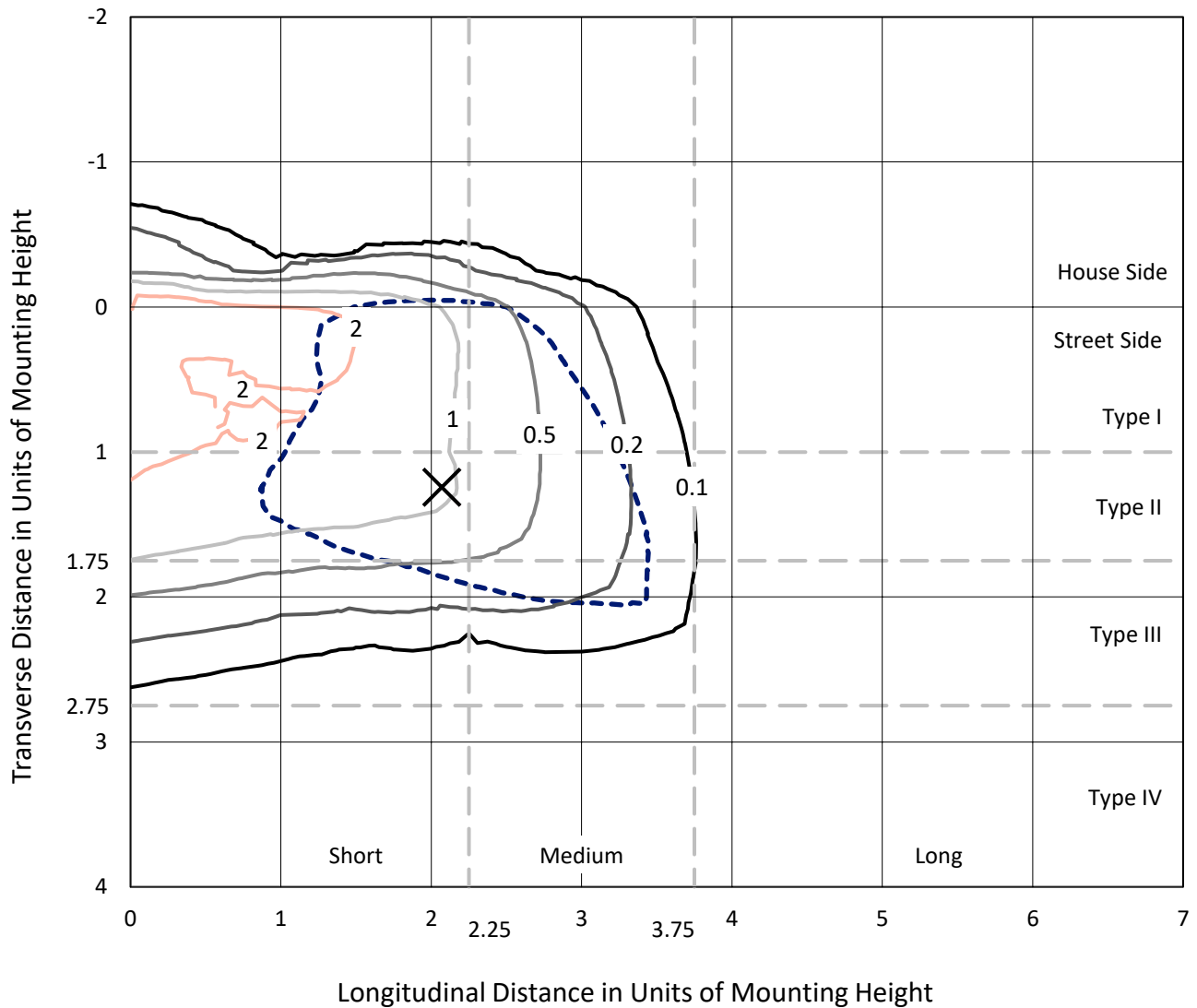
Input Watts (W): 171
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

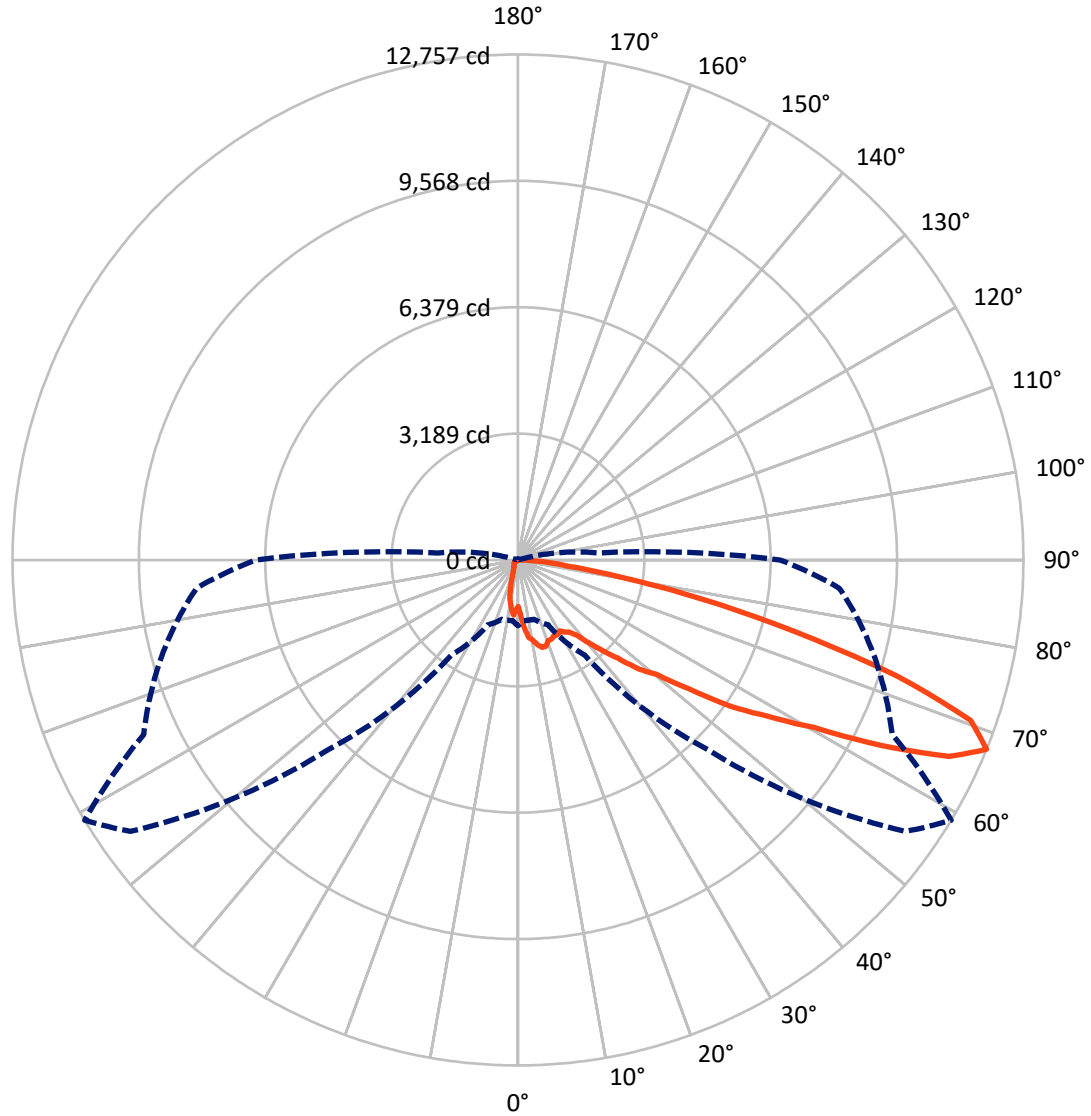
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 3.4 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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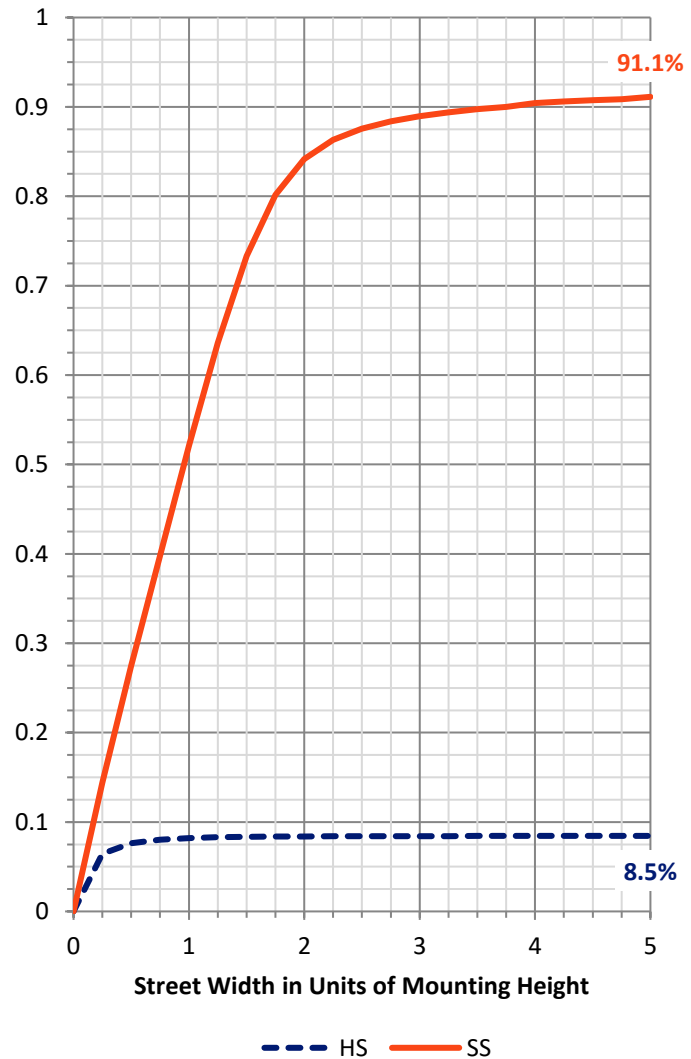
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 997.4 | 0.0 | 997.4 |
| | % Fixture | 8.5 | 0.0 | 8.5 |
| Street Side | Lumens | 10730.6 | 0.0 | 10730.6 |
| | % Fixture | 91.5 | 0.0 | 91.5 |
| Total | Lumens | 11728.0 | 0.0 | 11728.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 142.7 | 1.2 |
| 10°-20° | 401.7 | 3.4 |
| 20°-30° | 597.5 | 5.1 |
| 30°-40° | 921.9 | 7.9 |
| 40°-50° | 1645.3 | 14.0 |
| 50°-60° | 2927.8 | 25.0 |
| 60°-70° | 3409.9 | 29.1 |
| 70°-80° | 1516.4 | 12.9 |
| 80°-90° | 164.7 | 1.4 |
| 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° | 11728.0 | 100.0 |
| 0°-180° | 11728.0 | 100.0 |

Coefficient of Utilization

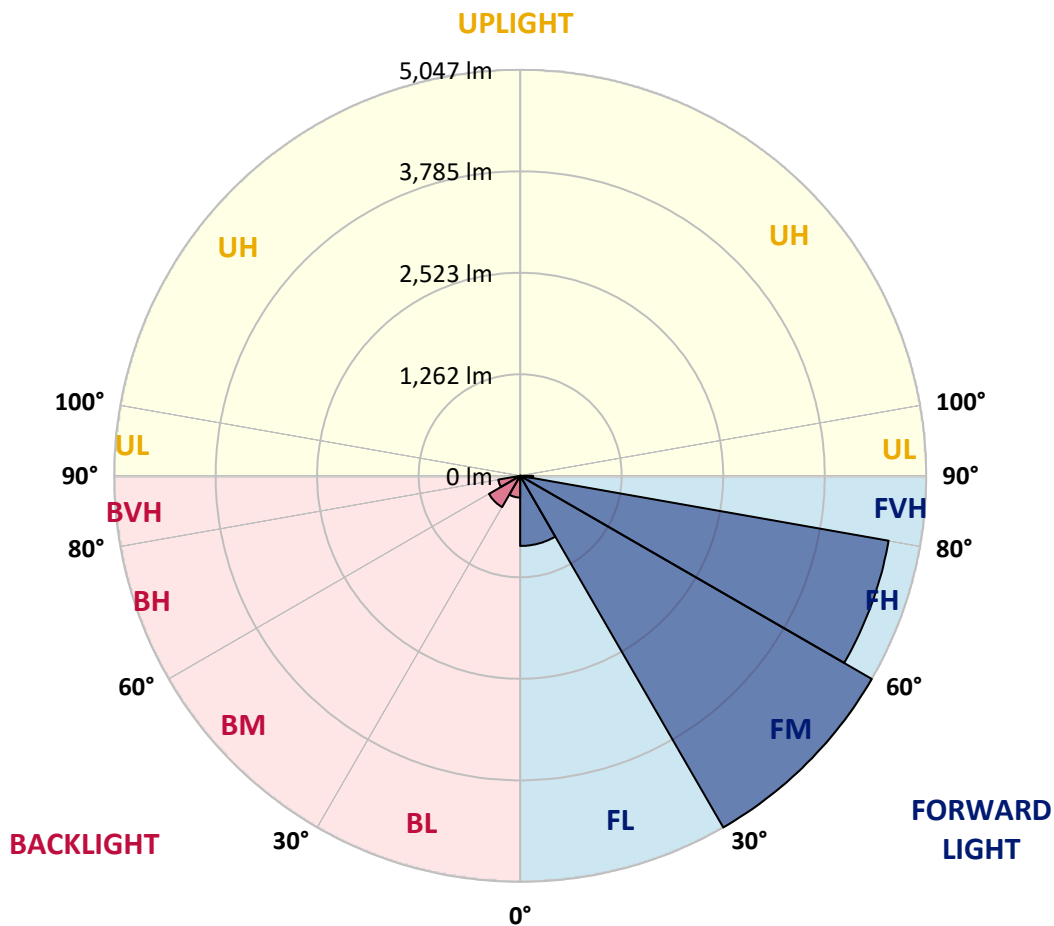


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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 872.2 | 7.4 | | | |
| FM (30°-60°) | 5046.6 | 43.0 | | | |
| FH (60°-80°) | 4650.1 | 39.6 | | | G2/5000 |
| FVH (80°-90°) | 161.8 | 1.4 | | | G2/225 |
| BL (0°-30°) | 269.7 | 2.3 | B1/500 | | |
| BM (30°-60°) | 448.5 | 3.8 | B1/1000 | | |
| BH (60°-80°) | 276.3 | 2.4 | B1/500 | | G1/500 |
| BVH (80°-90°) | 2.9 | 0.0 | | | G0/10 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B1-U0-G2
 Type III Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 59° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|---------|---------|---------|--------|--------|
| 0° | 1173.4 | 1173.4 | 1173.4 | 1173.4 | 1173.4 | 1173.4 | 1173.4 | 1173.4 | 1173.4 | 1173.4 | 1173.4 |
| 2.5° | 1529.7 | 1472.1 | 1390.2 | 1414.5 | 1436.5 | 1457.3 | 1422.8 | 1403.2 | 1393.7 | 1309.4 | 1415.1 |
| 5° | 1878.3 | 1806.5 | 1769.0 | 1759.5 | 1735.8 | 1682.9 | 1770.8 | 1731.6 | 1744.7 | 1761.3 | 1795.8 |
| 7.5° | 1984.6 | 1951.9 | 1897.9 | 1918.1 | 1827.8 | 1820.1 | 1941.9 | 1975.7 | 2020.2 | 1990.0 | 2031.5 |
| 10° | 1930.0 | 1873.6 | 1899.1 | 1892.0 | 1888.4 | 1968.0 | 2053.5 | 2055.3 | 2121.8 | 2153.9 | 2013.1 |
| 12.5° | 1821.9 | 1828.4 | 1919.9 | 1912.8 | 2031.5 | 2190.7 | 2210.3 | 2189.5 | 2298.2 | 2242.3 | 2221.0 |
| 15° | 1893.7 | 1947.2 | 1896.7 | 1913.9 | 1956.1 | 2155.0 | 2224.5 | 2288.7 | 2391.4 | 2424.6 | 2280.3 |
| 17.5° | 1980.4 | 1985.8 | 1893.7 | 1872.4 | 1978.7 | 2071.3 | 2235.2 | 2288.1 | 2298.2 | 2589.7 | 2414.0 |
| 20° | 1933.5 | 1979.3 | 1869.4 | 1734.6 | 1899.7 | 2025.6 | 2191.9 | 2175.2 | 2242.9 | 2638.4 | 2444.2 |
| 22.5° | 2058.2 | 1992.9 | 1852.2 | 1750.6 | 1806.5 | 1921.1 | 2061.8 | 2170.5 | 2272.0 | 2522.0 | 2483.4 |
| 25° | 2070.1 | 2046.4 | 1921.1 | 1830.8 | 1821.3 | 1850.4 | 2046.4 | 2116.4 | 2275.6 | 2626.5 | 2450.2 |
| 27.5° | 2203.7 | 2176.4 | 1919.9 | 1928.8 | 1839.7 | 1750.0 | 1971.5 | 2136.0 | 2340.3 | 2563.0 | 2520.8 |
| 30° | 2375.9 | 2378.3 | 2047.6 | 2075.5 | 1948.4 | 1804.1 | 2032.7 | 2077.8 | 2384.3 | 2664.6 | 2573.1 |
| 32.5° | 2550.5 | 2622.4 | 2299.9 | 2152.1 | 2112.3 | 2009.0 | 1956.7 | 2165.1 | 2336.2 | 2838.0 | 2703.7 |
| 35° | 2816.0 | 2864.7 | 2507.8 | 2375.4 | 2219.2 | 2101.6 | 2163.4 | 2238.2 | 2509.0 | 3067.8 | 2875.4 |
| 37.5° | 3265.5 | 3177.6 | 2880.7 | 2650.3 | 2612.9 | 2439.5 | 2470.4 | 2403.3 | 2685.3 | 3338.6 | 3215.0 |
| 40° | 3518.5 | 3438.9 | 3130.1 | 3017.9 | 2779.2 | 2805.9 | 2708.5 | 2747.7 | 2941.3 | 3620.6 | 3524.4 |
| 42.5° | 3782.2 | 3706.1 | 3435.4 | 3355.8 | 3128.3 | 3017.9 | 2973.9 | 3114.7 | 3333.8 | 4090.4 | 3968.0 |
| 45° | 4047.0 | 3854.0 | 3739.4 | 3779.2 | 3677.0 | 3458.5 | 3407.4 | 3532.7 | 3762.6 | 4667.6 | 4436.0 |
| 47.5° | 4270.3 | 4107.6 | 4021.5 | 4003.1 | 3963.3 | 4266.7 | 4058.9 | 4114.1 | 4215.7 | 5178.3 | 5019.1 |
| 50° | 4672.9 | 4512.6 | 4377.8 | 4340.4 | 4534.0 | 4964.5 | 4643.8 | 4536.9 | 4740.0 | 5795.3 | 5694.9 |
| 52.5° | 5254.3 | 5050.0 | 4835.6 | 4836.2 | 5201.4 | 5437.8 | 5589.8 | 5402.1 | 5440.2 | 6474.0 | 6429.5 |
| 55° | 5721.6 | 5462.1 | 5284.6 | 5424.7 | 5969.3 | 6101.7 | 6681.9 | 6517.4 | 6468.1 | 7103.5 | 7048.9 |
| 57.5° | 5785.8 | 5474.6 | 5390.3 | 5636.1 | 6381.4 | 7227.0 | 7851.1 | 7440.2 | 7364.8 | 7630.2 | 7738.9 |
| 60° | 5187.2 | 4857.0 | 4920.5 | 5316.0 | 6515.6 | 7912.9 | 8924.8 | 8589.3 | 8110.0 | 8247.2 | 8322.0 |
| 62.5° | 3868.9 | 3605.2 | 3783.3 | 4307.1 | 5998.4 | 8372.5 | 10167.7 | 10323.3 | 8974.7 | 8710.4 | 8694.4 |
| 65° | 2510.2 | 2345.1 | 2462.1 | 2891.4 | 4539.3 | 8320.3 | 11278.2 | 11952.8 | 9655.8 | 9088.1 | 8811.4 |
| 67.5° | 1660.4 | 1535.1 | 1551.7 | 1805.9 | 2935.3 | 6766.8 | 11942.1 | 12757.4 | 10421.9 | 9302.5 | 8140.9 |
| 70° | 1237.6 | 1139.0 | 1144.9 | 1282.7 | 1742.3 | 4462.7 | 11016.3 | 12122.6 | 10701.6 | 8559.6 | 6570.8 |
| 72.5° | 892.5 | 826.6 | 881.8 | 1035.1 | 1388.4 | 2359.9 | 8211.0 | 9983.6 | 9331.6 | 6751.3 | 4427.1 |
| 75° | 618.2 | 574.8 | 665.1 | 865.8 | 1267.3 | 1465.0 | 5425.9 | 7186.6 | 6540.5 | 4235.8 | 2001.2 |
| 77.5° | 342.6 | 329.6 | 459.6 | 705.5 | 1150.3 | 1200.7 | 3323.7 | 4722.2 | 3627.8 | 1518.4 | 476.3 |
| 80° | 149.6 | 144.9 | 222.7 | 529.7 | 966.8 | 1084.9 | 1871.2 | 2618.2 | 1427.0 | 270.8 | 153.8 |
| 82.5° | 64.1 | 61.8 | 95.0 | 318.9 | 702.5 | 907.4 | 1153.8 | 1260.1 | 491.1 | 83.7 | 87.3 |
| 85° | 11.3 | 12.5 | 38.0 | 168.1 | 427.6 | 460.8 | 835.5 | 745.9 | 247.0 | 39.8 | 62.4 |
| 87.5° | 0.0 | 0.0 | 5.9 | 32.7 | 80.2 | 131.8 | 362.2 | 261.3 | 46.9 | 13.1 | 10.7 |
| 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° | 1173.4 | 1173.4 | 1173.4 | 1173.4 | 1173.4 | 1173.4 | 1173.4 | 1173.4 | 1173.4 | 1173.4 | 1173.4 |
| 2.5° | 1430.0 | 1396.7 | 1270.2 | 1254.2 | 1237.0 | 1211.4 | 1201.9 | 1147.3 | 1140.2 | 1210.2 | 1210.2 |
| 5° | 1779.7 | 1661.0 | 1540.4 | 1445.4 | 1360.5 | 1242.9 | 1209.6 | 1175.2 | 1147.3 | 1140.2 | 1162.1 |
| 7.5° | 1964.4 | 1819.5 | 1630.1 | 1388.4 | 1192.4 | 1022.0 | 950.7 | 900.9 | 845.0 | 861.7 | 870.6 |
| 10° | 1954.3 | 1800.5 | 1558.8 | 1248.2 | 1030.9 | 842.7 | 661.5 | 555.8 | 497.0 | 467.9 | 464.4 |
| 12.5° | 2053.5 | 1908.6 | 1510.7 | 1136.6 | 859.3 | 599.2 | 416.3 | 340.9 | 297.5 | 298.1 | 294.5 |
| 15° | 2111.1 | 1953.1 | 1454.9 | 995.3 | 605.1 | 385.4 | 288.6 | 272.0 | 266.0 | 272.6 | 269.0 |
| 17.5° | 2212.6 | 2000.0 | 1328.4 | 784.5 | 416.3 | 291.0 | 265.4 | 258.9 | 266.6 | 280.3 | 276.7 |
| 20° | 2204.9 | 1918.7 | 1148.5 | 552.9 | 307.6 | 261.9 | 251.2 | 241.1 | 257.1 | 271.4 | 269.0 |
| 22.5° | 2197.8 | 1839.1 | 979.2 | 408.0 | 257.1 | 238.7 | 229.8 | 225.7 | 234.0 | 250.6 | 254.2 |
| 25° | 2134.8 | 1799.9 | 807.6 | 306.4 | 232.8 | 216.8 | 212.6 | 209.0 | 212.0 | 225.7 | 225.1 |
| 27.5° | 2212.0 | 1700.8 | 623.5 | 257.1 | 215.6 | 196.6 | 193.0 | 187.1 | 181.1 | 193.0 | 194.8 |
| 30° | 2196.0 | 1714.4 | 488.7 | 226.3 | 198.3 | 172.8 | 174.0 | 161.5 | 150.8 | 161.5 | 161.5 |
| 32.5° | 2254.2 | 1614.6 | 391.3 | 205.5 | 181.1 | 162.7 | 147.9 | 134.8 | 127.1 | 133.6 | 134.8 |
| 35° | 2339.1 | 1618.8 | 306.4 | 192.4 | 166.3 | 144.9 | 127.1 | 114.0 | 106.9 | 109.9 | 111.6 |
| 37.5° | 2623.6 | 1590.3 | 255.9 | 182.3 | 160.9 | 134.2 | 115.8 | 98.6 | 93.8 | 97.4 | 99.2 |
| 40° | 2808.9 | 1666.3 | 225.7 | 177.0 | 147.3 | 123.5 | 99.2 | 86.7 | 82.5 | 84.3 | 87.3 |
| 42.5° | 3158.0 | 1708.5 | 210.8 | 171.0 | 134.8 | 105.7 | 84.9 | 77.8 | 71.9 | 74.2 | 76.6 |
| 45° | 3531.6 | 1780.3 | 199.5 | 164.5 | 125.3 | 92.6 | 74.8 | 68.9 | 61.2 | 61.8 | 64.1 |
| 47.5° | 3990.6 | 1951.4 | 186.5 | 153.2 | 112.2 | 84.3 | 66.5 | 57.6 | 50.5 | 49.9 | 52.9 |
| 50° | 4607.0 | 2180.0 | 174.6 | 139.0 | 103.9 | 77.2 | 58.2 | 46.9 | 41.0 | 39.2 | 41.6 |
| 52.5° | 5265.0 | 2475.7 | 162.1 | 128.9 | 93.8 | 67.7 | 49.9 | 38.0 | 32.7 | 31.5 | 33.3 |
| 55° | 5917.0 | 2759.6 | 150.2 | 122.3 | 83.1 | 58.2 | 42.2 | 31.5 | 26.7 | 25.5 | 26.7 |
| 57.5° | 6659.9 | 3066.6 | 134.8 | 109.3 | 73.0 | 50.5 | 35.0 | 26.1 | 22.0 | 20.8 | 21.4 |
| 60° | 7219.3 | 3174.7 | 121.7 | 95.0 | 63.5 | 44.5 | 29.7 | 20.8 | 17.8 | 16.6 | 17.2 |
| 62.5° | 7484.7 | 2998.3 | 109.3 | 82.5 | 55.8 | 38.6 | 24.9 | 17.2 | 14.8 | 13.7 | 13.7 |
| 65° | 7415.8 | 2607.5 | 96.8 | 70.7 | 48.1 | 32.1 | 19.6 | 14.8 | 13.1 | 11.3 | 10.7 |
| 67.5° | 6620.1 | 2040.4 | 82.5 | 59.4 | 40.4 | 26.1 | 16.6 | 14.3 | 11.9 | 10.7 | 8.9 |
| 70° | 5250.1 | 1477.5 | 67.1 | 49.3 | 33.8 | 21.4 | 13.1 | 13.1 | 11.3 | 10.7 | 8.3 |
| 72.5° | 3441.3 | 930.0 | 54.6 | 39.8 | 27.9 | 16.6 | 10.1 | 11.9 | 10.7 | 10.7 | 7.7 |
| 75° | 1491.1 | 332.5 | 43.9 | 32.1 | 23.2 | 11.3 | 8.9 | 10.7 | 11.3 | 10.7 | 8.9 |
| 77.5° | 349.2 | 103.3 | 34.4 | 25.5 | 19.0 | 7.7 | 8.9 | 10.7 | 11.3 | 10.1 | 7.7 |
| 80° | 131.2 | 43.9 | 22.6 | 16.6 | 14.8 | 4.8 | 7.7 | 6.5 | 5.9 | 4.2 | 1.2 |
| 82.5° | 79.6 | 18.4 | 11.9 | 8.3 | 7.1 | 1.2 | 3.6 | 2.4 | 1.2 | 1.2 | 0.0 |
| 85° | 56.4 | 8.9 | 6.5 | 5.9 | 3.6 | 0.0 | 0.6 | 0.0 | 0.0 | 0.6 | 0.0 |
| 87.5° | 7.7 | 2.4 | 3.0 | 3.0 | 2.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 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)