

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: P367659

Luminaire Tested: **MSA-SA3A-727-U-SL2-HSS**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P367659
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-SA3A-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: 8040 lumens
Efficiency: N/A
Efficacy: 83.8 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type II - Short
BUG Rating: B1 - U0 - G2

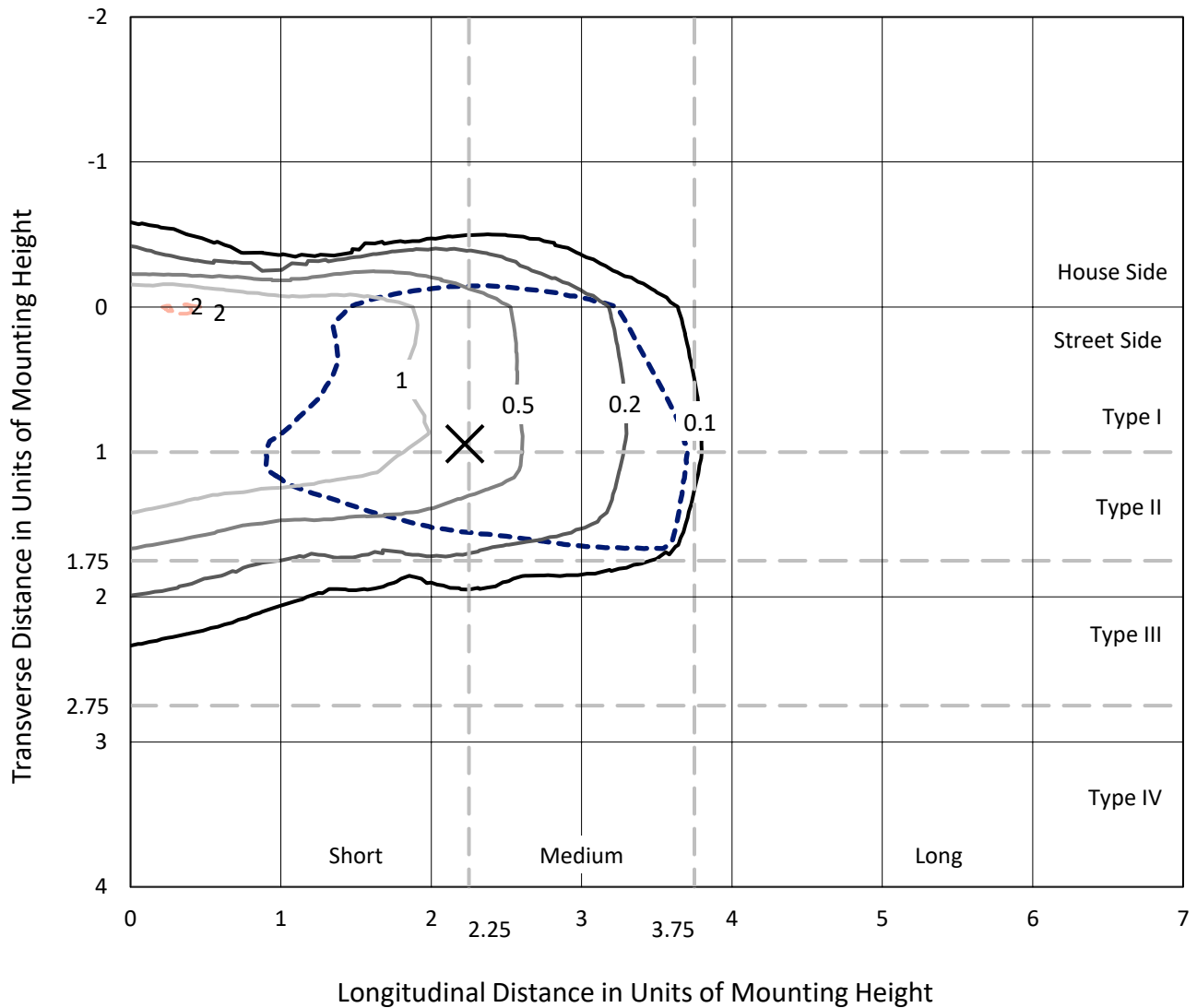
Input Watts (W): 96
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

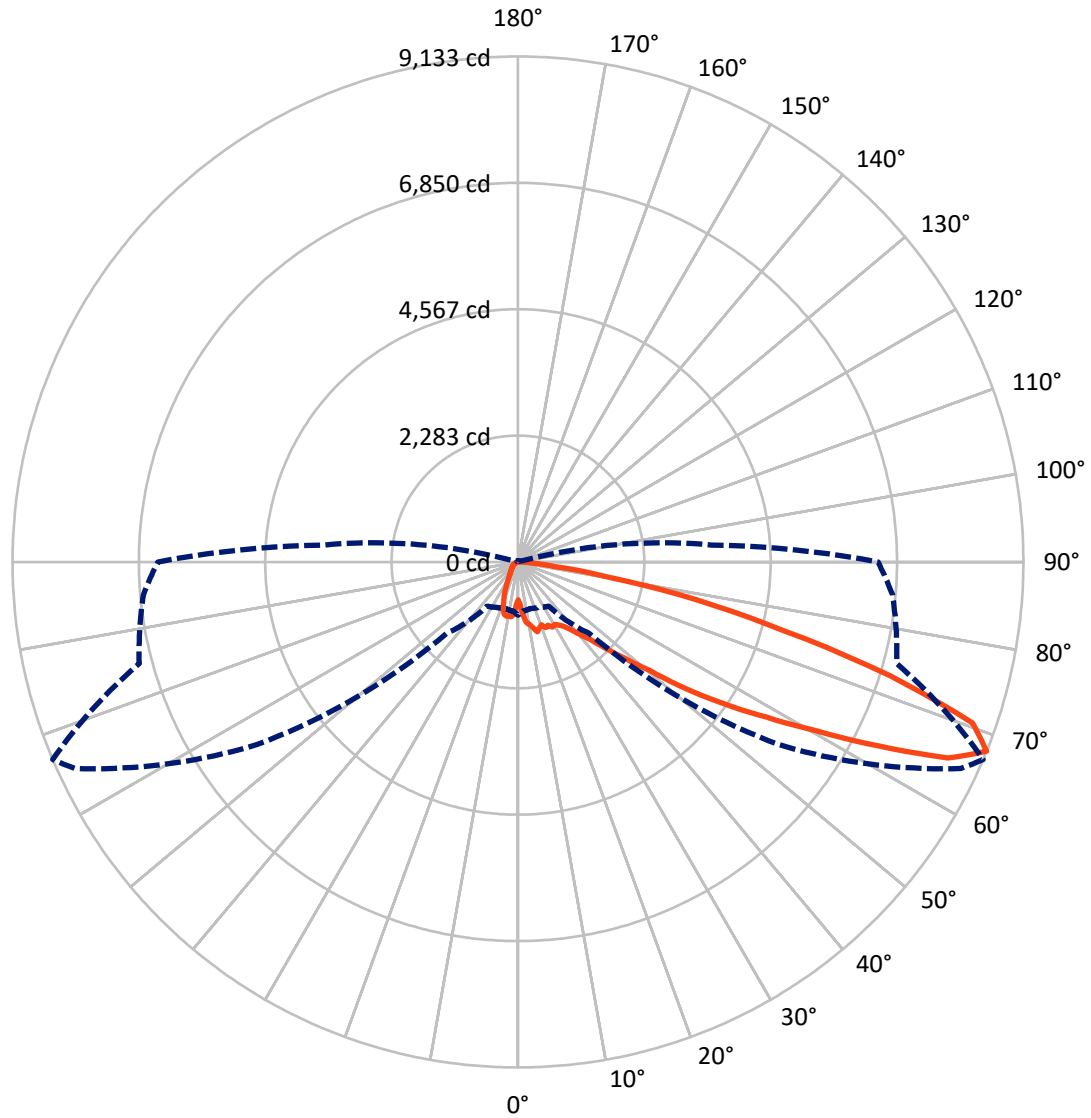
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 2.1 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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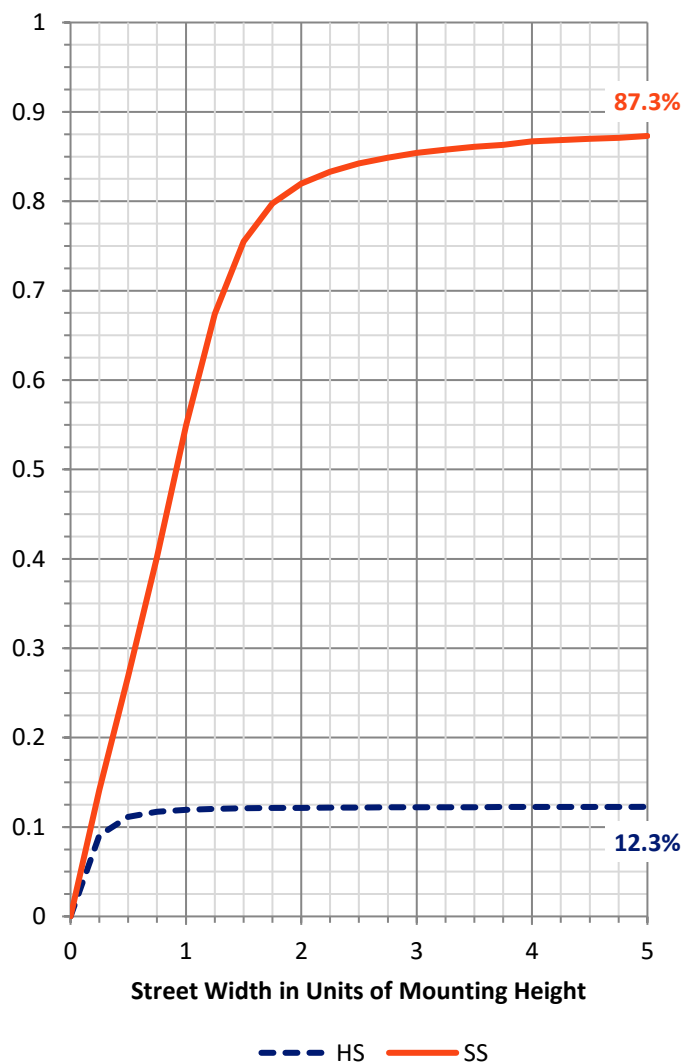
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 994.3 | 0.0 | 994.3 |
| | % Fixture | 12.4 | 0.0 | 12.4 |
| Street Side | Lumens | 7045.7 | 0.0 | 7045.7 |
| | % Fixture | 87.6 | 0.0 | 87.6 |
| Total | Lumens | 8040.0 | 0.0 | 8040.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 86.0 | 1.1 |
| 10°-20° | 254.3 | 3.2 |
| 20°-30° | 398.6 | 5.0 |
| 30°-40° | 642.7 | 8.0 |
| 40°-50° | 1181.0 | 14.7 |
| 50°-60° | 1994.5 | 24.8 |
| 60°-70° | 2205.0 | 27.4 |
| 70°-80° | 1154.1 | 14.4 |
| 80°-90° | 123.9 | 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° | 8040.0 | 100.0 |
| 0°-180° | 8040.0 | 100.0 |

Coefficient of Utilization

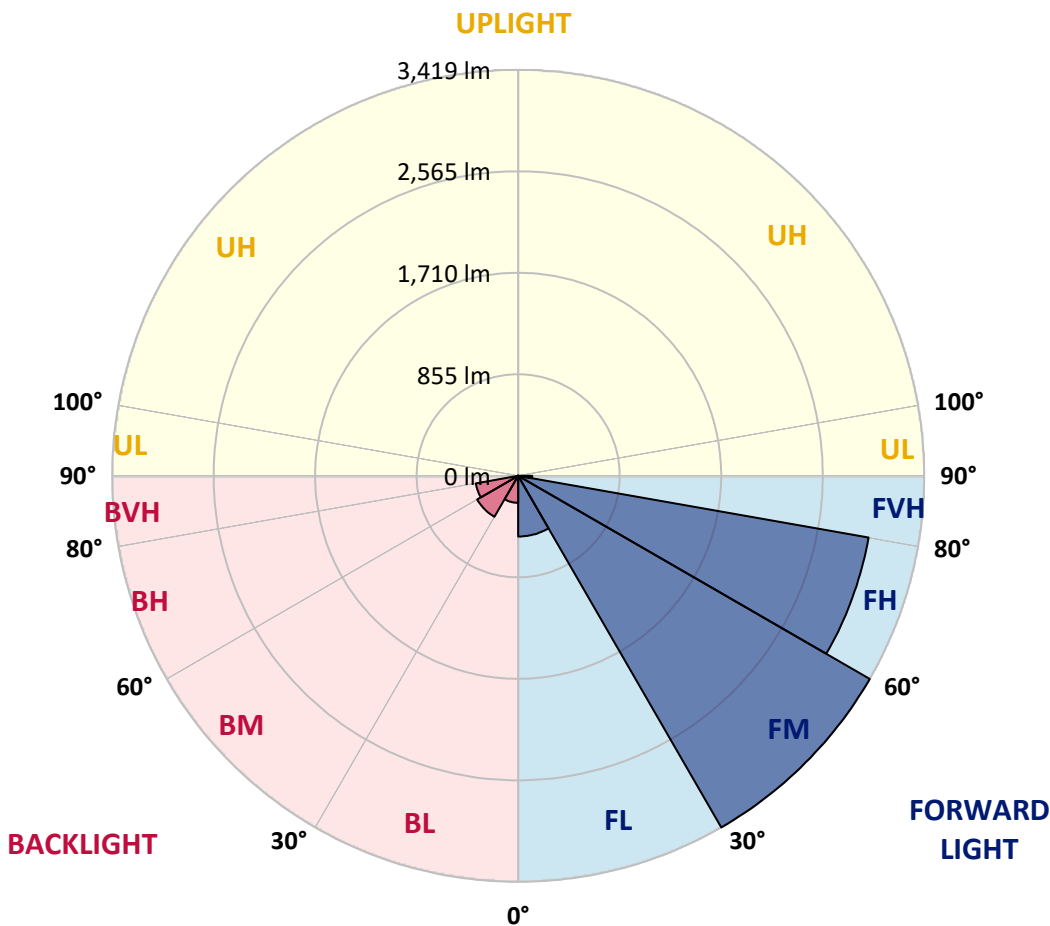


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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 511.2 | 6.4 | | | |
| FM (30°-60°) | 3419.4 | 42.5 | | | |
| FH (60°-80°) | 2996.4 | 37.3 | | | G2/5000 |
| FVH (80°-90°) | 118.7 | 1.5 | | | G2/225 |
| BL (0°-30°) | 227.7 | 2.8 | B1/500 | | |
| BM (30°-60°) | 398.7 | 5.0 | B1/1000 | | |
| BH (60°-80°) | 362.7 | 4.5 | B1/500 | | G1/500 |
| BVH (80°-90°) | 5.3 | 0.1 | | | 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 II Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 67° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 684.8 | 684.8 | 684.8 | 684.8 | 684.8 | 684.8 | 684.8 | 684.8 | 684.8 | 684.8 | 684.8 |
| 2.5° | 808.4 | 781.0 | 734.5 | 748.0 | 774.9 | 797.3 | 786.7 | 765.9 | 766.4 | 745.1 | 821.4 |
| 5° | 940.5 | 903.8 | 876.9 | 886.3 | 885.0 | 884.2 | 934.4 | 953.6 | 961.7 | 996.8 | 1048.6 |
| 7.5° | 978.4 | 965.4 | 937.2 | 945.8 | 917.7 | 919.7 | 1007.8 | 1091.0 | 1104.1 | 1125.7 | 1217.8 |
| 10° | 963.8 | 938.5 | 948.7 | 948.7 | 949.1 | 994.7 | 1053.9 | 1133.4 | 1149.3 | 1232.5 | 1242.3 |
| 12.5° | 947.8 | 949.1 | 989.4 | 982.1 | 1037.6 | 1119.6 | 1139.5 | 1228.9 | 1221.1 | 1293.3 | 1400.6 |
| 15° | 1007.0 | 1038.0 | 1011.9 | 1022.1 | 1027.4 | 1123.6 | 1155.9 | 1274.5 | 1308.8 | 1400.2 | 1469.9 |
| 17.5° | 1108.5 | 1112.6 | 1058.4 | 1043.7 | 1082.0 | 1109.4 | 1174.2 | 1231.3 | 1254.1 | 1494.0 | 1592.7 |
| 20° | 1126.9 | 1153.0 | 1097.9 | 1013.1 | 1094.3 | 1131.8 | 1177.1 | 1204.4 | 1214.2 | 1522.9 | 1662.0 |
| 22.5° | 1237.4 | 1208.5 | 1120.4 | 1055.9 | 1079.2 | 1120.0 | 1148.1 | 1230.5 | 1289.2 | 1468.3 | 1728.5 |
| 25° | 1294.1 | 1286.4 | 1202.3 | 1147.3 | 1123.6 | 1120.4 | 1184.8 | 1247.2 | 1266.0 | 1525.0 | 1744.8 |
| 27.5° | 1429.9 | 1412.4 | 1249.7 | 1242.7 | 1164.8 | 1096.3 | 1186.0 | 1298.2 | 1333.3 | 1471.5 | 1806.0 |
| 30° | 1614.7 | 1608.2 | 1391.6 | 1387.1 | 1263.1 | 1139.9 | 1252.1 | 1329.6 | 1308.4 | 1498.9 | 1846.8 |
| 32.5° | 1800.7 | 1853.7 | 1632.2 | 1505.8 | 1412.8 | 1300.2 | 1233.3 | 1319.8 | 1357.7 | 1565.3 | 1921.8 |
| 35° | 2025.4 | 2063.7 | 1838.2 | 1746.4 | 1539.6 | 1375.3 | 1357.7 | 1413.2 | 1429.5 | 1644.5 | 2007.0 |
| 37.5° | 2418.6 | 2360.6 | 2168.5 | 2012.3 | 1903.9 | 1643.2 | 1556.8 | 1512.7 | 1550.7 | 1751.7 | 2181.2 |
| 40° | 2708.9 | 2672.2 | 2435.7 | 2342.3 | 2092.7 | 1940.1 | 1714.2 | 1673.0 | 1715.4 | 1861.8 | 2302.3 |
| 42.5° | 3059.3 | 2983.0 | 2760.3 | 2697.1 | 2440.2 | 2146.1 | 1916.9 | 1931.2 | 1904.7 | 2079.2 | 2514.8 |
| 45° | 3376.2 | 3204.1 | 3080.1 | 3094.4 | 2957.3 | 2560.1 | 2255.0 | 2248.1 | 2226.1 | 2394.1 | 2738.3 |
| 47.5° | 3589.5 | 3439.0 | 3318.3 | 3278.7 | 3262.4 | 3288.1 | 2743.6 | 2620.4 | 2604.1 | 2724.9 | 3090.3 |
| 50° | 3704.1 | 3539.3 | 3390.1 | 3398.2 | 3729.4 | 3978.6 | 3247.7 | 3072.8 | 3078.9 | 3204.9 | 3571.6 |
| 52.5° | 3627.0 | 3440.6 | 3283.2 | 3436.1 | 4091.6 | 4439.1 | 4082.2 | 3663.7 | 3805.7 | 3773.4 | 4217.2 |
| 55° | 3271.0 | 3109.1 | 2997.3 | 3271.0 | 4131.1 | 4934.6 | 5109.6 | 4553.3 | 4521.4 | 4448.0 | 4875.5 |
| 57.5° | 2671.8 | 2532.3 | 2463.4 | 2752.2 | 3698.4 | 5333.9 | 6141.4 | 5558.6 | 5287.4 | 4979.9 | 5422.0 |
| 60° | 1990.7 | 1887.9 | 1816.2 | 1968.7 | 2914.1 | 4946.0 | 6817.2 | 6506.0 | 6192.0 | 5492.5 | 5913.0 |
| 62.5° | 1474.4 | 1390.8 | 1314.5 | 1328.4 | 2006.6 | 4253.9 | 7076.6 | 7509.8 | 7329.5 | 6033.8 | 6376.3 |
| 65° | 1176.7 | 1100.4 | 1047.0 | 1016.4 | 1242.7 | 3200.4 | 6715.7 | 8332.4 | 8540.4 | 6543.6 | 6710.8 |
| 67.5° | 960.9 | 896.5 | 869.9 | 905.0 | 974.8 | 1824.3 | 5751.5 | 8831.6 | 9133.4 | 7084.4 | 6793.2 |
| 70° | 781.9 | 728.8 | 726.0 | 820.6 | 897.7 | 1112.2 | 4230.6 | 8487.0 | 8714.2 | 7176.6 | 6299.3 |
| 72.5° | 544.9 | 521.6 | 558.8 | 692.9 | 889.5 | 926.2 | 2429.6 | 7023.2 | 7031.4 | 6338.4 | 5181.3 |
| 75° | 308.3 | 304.7 | 363.4 | 552.6 | 866.3 | 916.8 | 1354.5 | 4963.1 | 4966.8 | 4793.9 | 3589.5 |
| 77.5° | 169.7 | 158.7 | 211.7 | 373.6 | 743.9 | 895.6 | 873.6 | 3388.8 | 3302.0 | 2667.8 | 1639.6 |
| 80° | 78.3 | 73.8 | 114.6 | 239.4 | 544.1 | 847.1 | 700.3 | 1862.7 | 1679.5 | 869.1 | 400.1 |
| 82.5° | 32.2 | 30.6 | 52.6 | 153.8 | 343.8 | 682.3 | 590.2 | 826.3 | 663.2 | 165.2 | 123.6 |
| 85° | 5.7 | 6.1 | 21.6 | 93.0 | 192.5 | 314.5 | 478.4 | 392.4 | 288.4 | 45.7 | 67.7 |
| 87.5° | 0.0 | 0.0 | 4.5 | 22.4 | 46.5 | 86.1 | 194.1 | 109.7 | 75.5 | 13.5 | 20.0 |
| 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° | 684.8 | 684.8 | 684.8 | 684.8 | 684.8 | 684.8 | 684.8 | 684.8 | 684.8 | 684.8 | 684.8 |
| 2.5° | 836.5 | 829.6 | 759.4 | 762.7 | 767.6 | 763.1 | 762.3 | 742.7 | 724.8 | 783.9 | 783.1 |
| 5° | 1058.0 | 1008.6 | 960.1 | 941.3 | 900.9 | 847.9 | 848.3 | 831.6 | 814.5 | 838.5 | 838.5 |
| 7.5° | 1215.8 | 1147.7 | 1086.1 | 976.4 | 869.5 | 772.9 | 764.3 | 741.5 | 715.4 | 746.8 | 752.9 |
| 10° | 1252.5 | 1193.4 | 1113.8 | 952.7 | 851.6 | 757.4 | 653.8 | 568.5 | 529.0 | 510.6 | 507.4 |
| 12.5° | 1365.5 | 1321.4 | 1143.6 | 965.4 | 819.8 | 660.3 | 490.6 | 389.5 | 320.6 | 315.3 | 307.9 |
| 15° | 1440.9 | 1409.9 | 1173.0 | 934.0 | 685.2 | 474.7 | 308.3 | 236.6 | 208.8 | 206.4 | 202.7 |
| 17.5° | 1558.0 | 1504.2 | 1144.8 | 834.1 | 535.9 | 313.2 | 207.2 | 186.8 | 190.1 | 197.4 | 191.7 |
| 20° | 1605.7 | 1500.5 | 1083.7 | 689.3 | 376.4 | 210.0 | 179.9 | 168.9 | 177.4 | 184.3 | 181.1 |
| 22.5° | 1654.7 | 1511.1 | 1029.4 | 568.1 | 245.9 | 173.7 | 160.3 | 154.6 | 155.4 | 162.3 | 162.7 |
| 25° | 1654.2 | 1540.5 | 966.6 | 442.5 | 183.1 | 154.6 | 144.8 | 137.4 | 134.6 | 139.5 | 138.3 |
| 27.5° | 1734.6 | 1506.6 | 852.0 | 328.3 | 161.1 | 138.3 | 128.9 | 119.9 | 109.7 | 114.6 | 114.6 |
| 30° | 1735.0 | 1561.7 | 772.1 | 235.7 | 147.6 | 123.2 | 115.0 | 101.1 | 89.3 | 93.4 | 93.8 |
| 32.5° | 1781.1 | 1513.9 | 698.2 | 180.3 | 137.0 | 114.2 | 96.3 | 83.6 | 76.7 | 79.1 | 79.1 |
| 35° | 1833.7 | 1554.7 | 584.9 | 159.1 | 126.4 | 101.6 | 82.4 | 72.2 | 66.9 | 68.9 | 68.9 |
| 37.5° | 2007.4 | 1546.2 | 506.1 | 148.1 | 119.5 | 91.8 | 75.0 | 63.6 | 61.2 | 62.4 | 64.0 |
| 40° | 2070.3 | 1606.9 | 399.3 | 141.5 | 108.1 | 82.8 | 66.1 | 57.5 | 54.2 | 55.1 | 55.5 |
| 42.5° | 2230.1 | 1620.4 | 318.9 | 136.2 | 97.9 | 71.8 | 58.7 | 52.6 | 48.5 | 48.5 | 49.8 |
| 45° | 2406.7 | 1654.2 | 253.7 | 131.7 | 89.3 | 64.4 | 53.0 | 48.1 | 42.0 | 41.2 | 42.8 |
| 47.5° | 2662.5 | 1783.9 | 206.8 | 122.8 | 79.1 | 60.0 | 48.9 | 41.6 | 36.7 | 35.1 | 36.7 |
| 50° | 3090.3 | 2004.2 | 182.7 | 111.8 | 71.8 | 56.3 | 43.2 | 35.5 | 31.8 | 29.8 | 31.0 |
| 52.5° | 3693.9 | 2384.7 | 170.1 | 101.6 | 65.3 | 50.6 | 38.7 | 31.0 | 27.3 | 25.7 | 26.5 |
| 55° | 4364.4 | 2821.1 | 164.0 | 91.4 | 59.5 | 44.5 | 33.9 | 27.3 | 24.1 | 22.0 | 22.4 |
| 57.5° | 4984.4 | 3231.4 | 157.8 | 81.6 | 53.8 | 39.6 | 29.8 | 24.1 | 20.8 | 18.8 | 19.2 |
| 60° | 5595.3 | 3558.9 | 143.2 | 70.2 | 48.5 | 35.5 | 26.1 | 20.8 | 18.8 | 16.3 | 16.3 |
| 62.5° | 6135.7 | 3754.7 | 121.9 | 60.8 | 43.6 | 31.4 | 23.2 | 18.8 | 17.1 | 14.7 | 14.7 |
| 65° | 6503.6 | 3763.7 | 98.3 | 52.2 | 38.3 | 26.9 | 20.4 | 17.5 | 15.9 | 13.1 | 12.6 |
| 67.5° | 6508.9 | 3518.9 | 78.7 | 46.5 | 33.9 | 23.7 | 18.4 | 16.7 | 14.7 | 12.2 | 11.4 |
| 70° | 5825.7 | 2907.2 | 65.7 | 40.8 | 29.4 | 20.8 | 15.9 | 15.9 | 14.3 | 11.8 | 10.6 |
| 72.5° | 4660.1 | 2221.6 | 55.1 | 35.5 | 26.1 | 17.9 | 14.7 | 15.1 | 13.9 | 11.8 | 10.6 |
| 75° | 3132.3 | 1274.1 | 45.7 | 30.2 | 22.8 | 15.1 | 14.3 | 14.7 | 14.3 | 11.8 | 10.2 |
| 77.5° | 1442.6 | 405.8 | 35.5 | 24.9 | 19.6 | 12.6 | 13.9 | 13.9 | 13.1 | 10.6 | 9.0 |
| 80° | 325.1 | 99.9 | 25.7 | 18.4 | 15.9 | 9.4 | 12.6 | 11.4 | 10.2 | 7.3 | 5.3 |
| 82.5° | 118.3 | 30.6 | 15.5 | 11.4 | 9.8 | 3.7 | 8.2 | 8.2 | 7.3 | 5.3 | 3.3 |
| 85° | 67.7 | 15.9 | 8.6 | 7.3 | 5.3 | 1.6 | 4.5 | 4.9 | 4.1 | 3.7 | 1.6 |
| 87.5° | 22.0 | 3.7 | 4.1 | 4.5 | 4.1 | 0.8 | 1.6 | 1.6 | 1.2 | 0.8 | 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)