

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: P368290

Luminaire Tested: **MSA-SA4A-760-U-T4FT**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P368290  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-12)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/2/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: INVUE  
Catalog Number: MSA-SA4A-760-U-T4FT  
Description: MESA POST TOP DECORATIVE LUMINAIRE. (4) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV FORWARD THROW OPTICS.  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 15539 lumens  
Efficiency: N/A  
Efficacy: 120.5 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B2 - U0 - G3

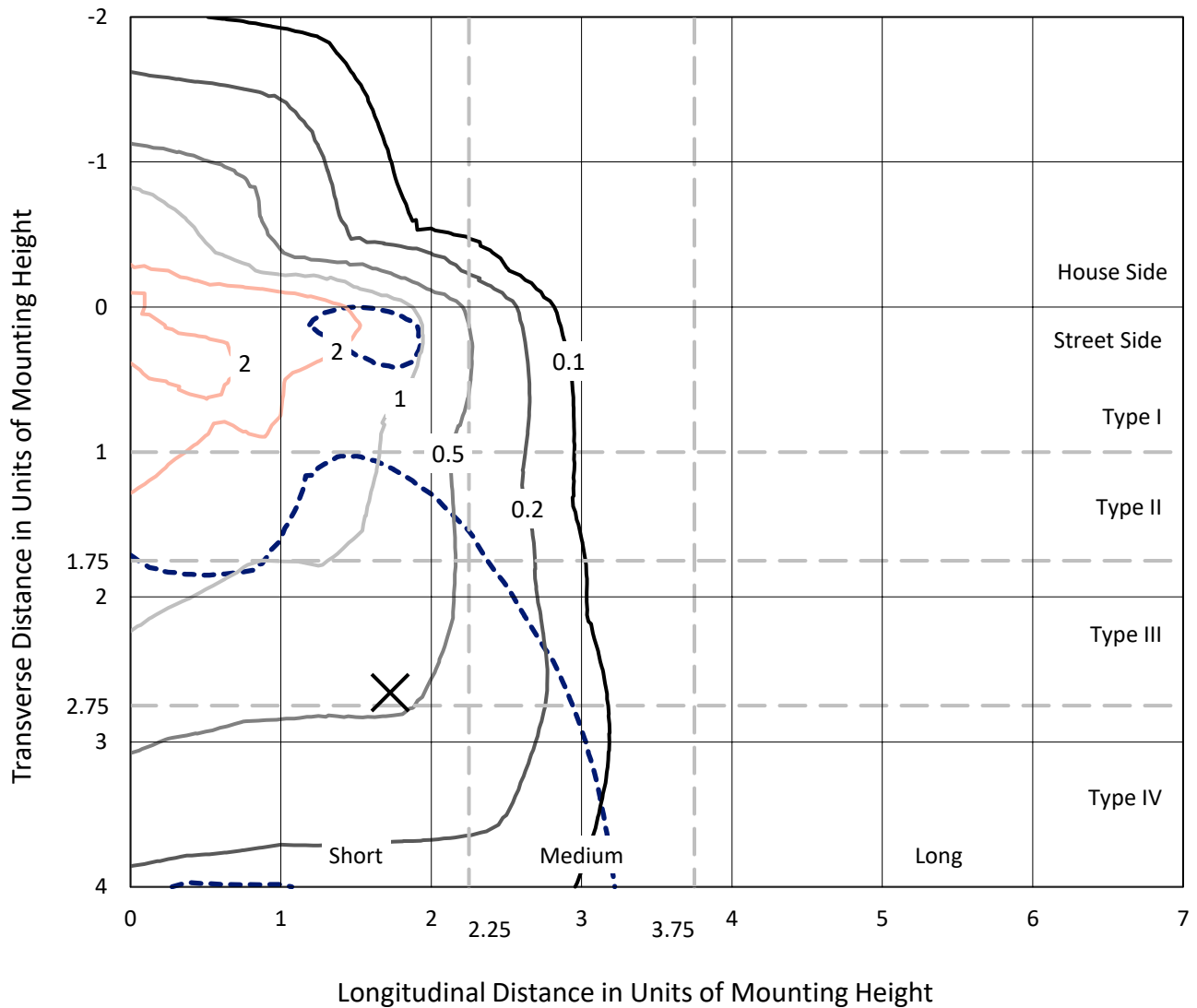
Input Watts (W): 129  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

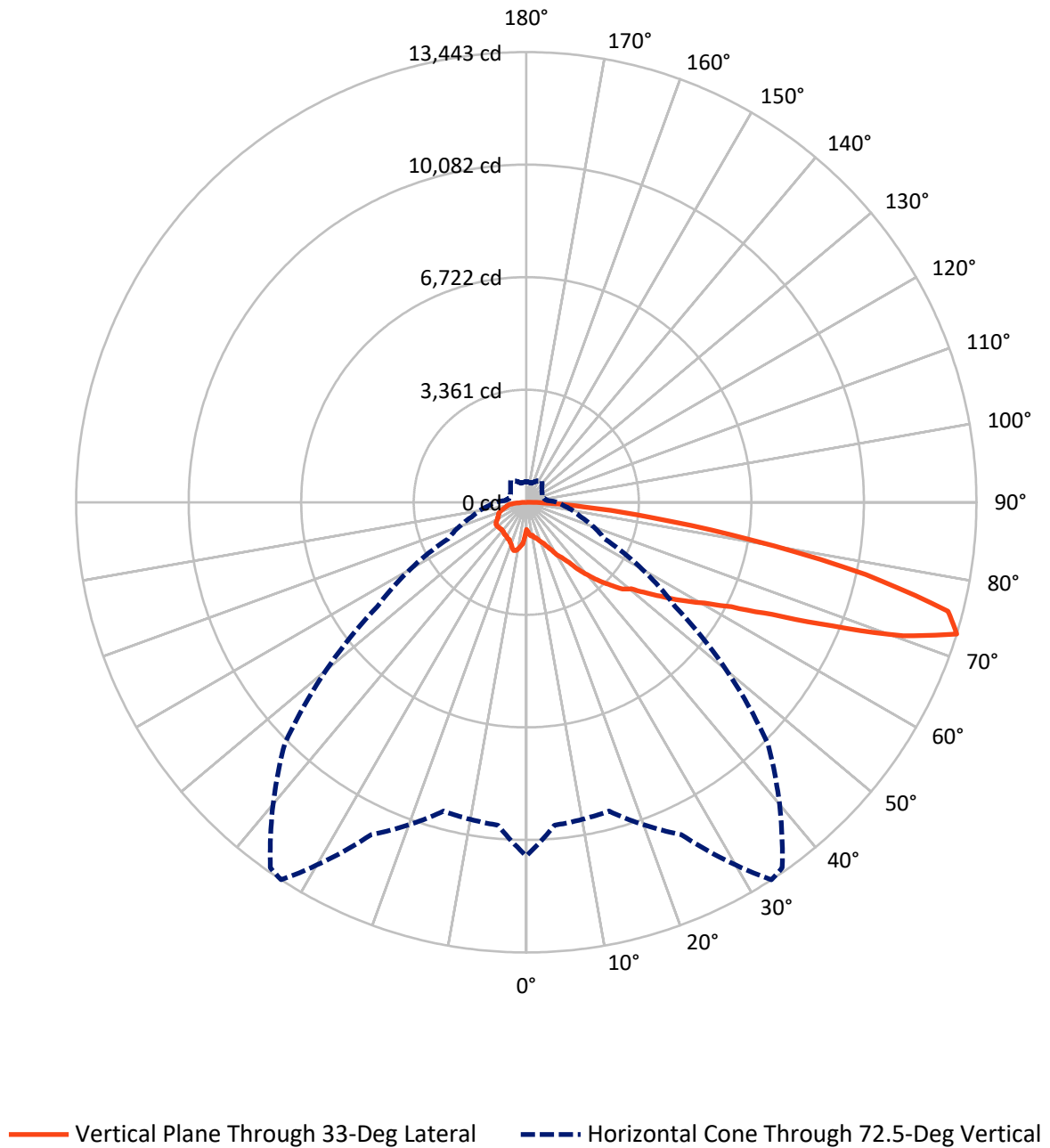
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 3.2 fc  
 Type IV - Short - N/A

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### Luminous Intensity Polar Plot



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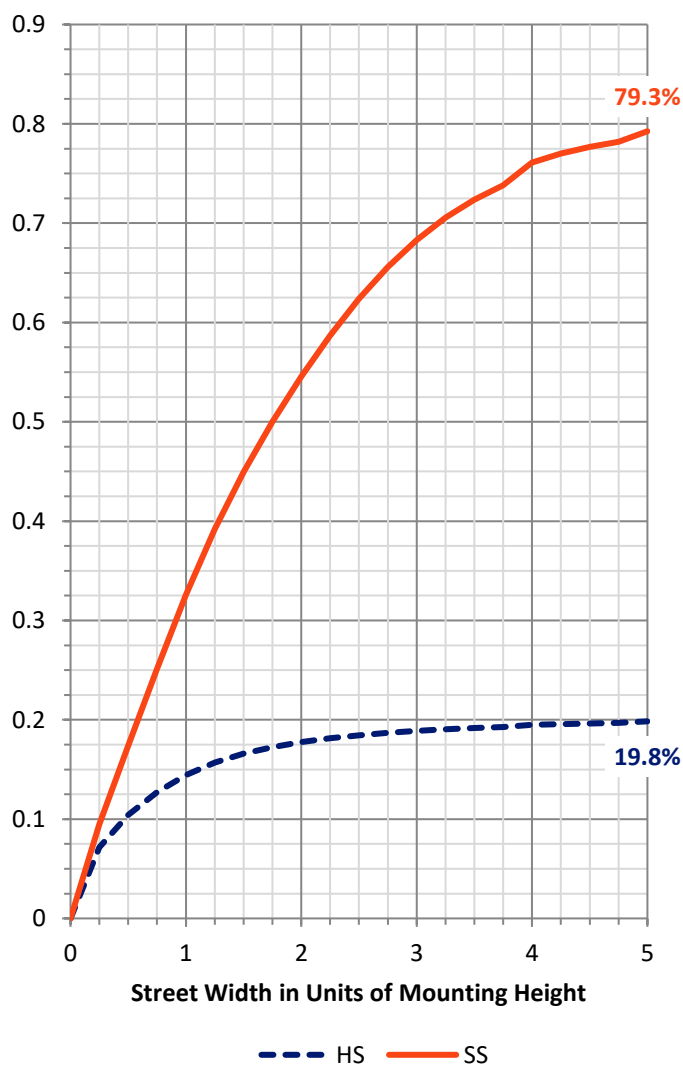
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 3143.5   | 0.0    | 3143.5  |
|                    | % Fixture | 20.2     | 0.0    | 20.2    |
| <b>Street Side</b> | Lumens    | 12395.5  | 0.0    | 12395.5 |
|                    | % Fixture | 79.8     | 0.0    | 79.8    |
| <b>Total</b>       | Lumens    | 15539.0  | 0.0    | 15539.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 112.1   | 0.7       |
| 10°-20°   | 414.0   | 2.7       |
| 20°-30°   | 755.0   | 4.9       |
| 30°-40°   | 1277.2  | 8.2       |
| 40°-50°   | 2124.9  | 13.7      |
| 50°-60°   | 3118.4  | 20.1      |
| 60°-70°   | 3989.2  | 25.7      |
| 70°-80°   | 3245.6  | 20.9      |
| 80°-90°   | 502.7   | 3.2       |
| 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°    | 15539.0 | 100.0     |
| 0°-180°   | 15539.0 | 100.0     |

**Coefficient of Utilization**



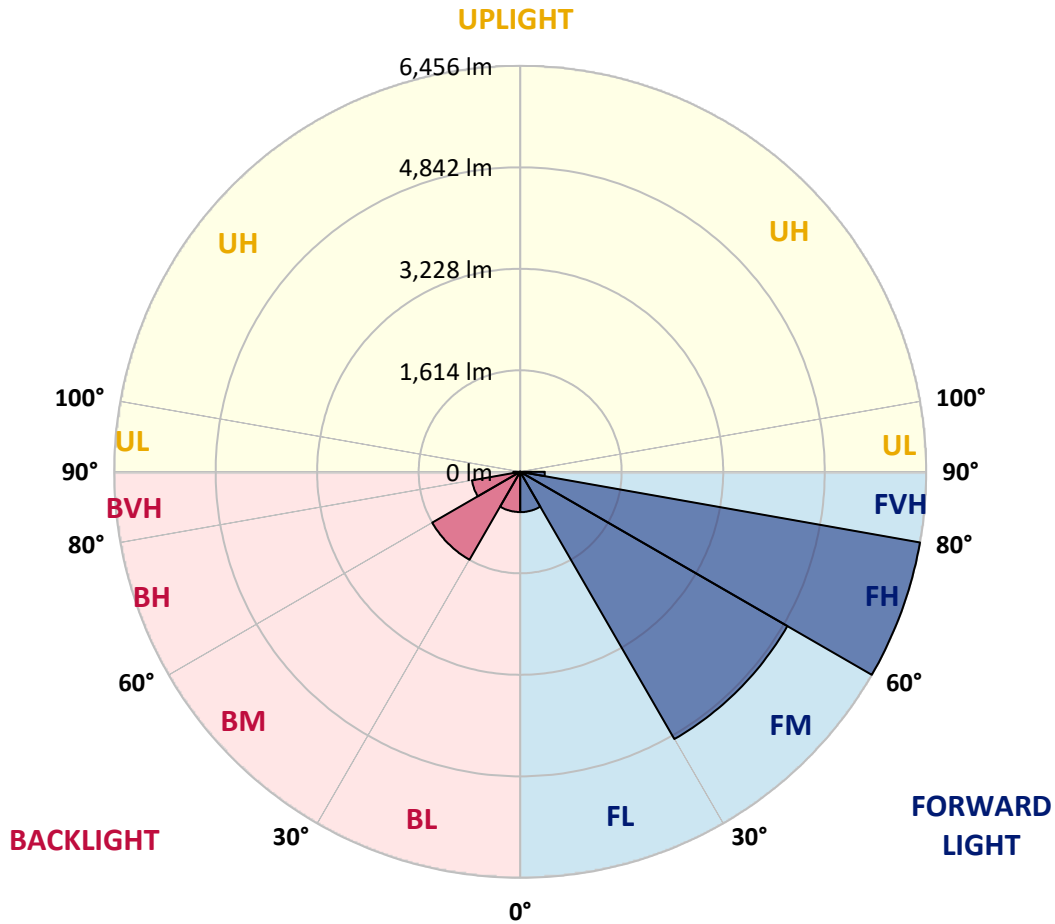
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone           | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|----------------|--------|-----------|-------------------------|------|---------|
|                |        |           | B                       | U    | G       |
| FL (0°-30°)    | 641.3  | 4.1       |                         |      |         |
| FM (30°-60°)   | 4906.0 | 31.6      |                         |      |         |
| FH (60°-80°)   | 6455.9 | 41.5      |                         |      | G3/7500 |
| FVH (80°-90°)  | 392.3  | 2.5       |                         |      | G3/500  |
| BL (0°-30°)    | 639.8  | 4.1       | B2/1000                 |      |         |
| BM (30°-60°)   | 1614.5 | 10.4      | B2/2500                 |      |         |
| BH (60°-80°)   | 778.9  | 5.0       | B2/1000                 |      | G2/1000 |
| BVH (80°-90°)  | 110.4  | 0.7       |                         |      | G2/225  |
| UL (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B2-U0-G3**

Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 5°     | 15°    | 25°     | 33°     | 35°     | 45°     | 55°    | 65°    | 75°    | 85°    |
|-------|---------|--------|--------|---------|---------|---------|---------|--------|--------|--------|--------|
| 0°    | 814.8   | 814.8  | 814.8  | 814.8   | 814.8   | 814.8   | 814.8   | 814.8  | 814.8  | 814.8  | 814.8  |
| 2.5°  | 923.7   | 894.7  | 847.0  | 845.7   | 872.2   | 878.0   | 895.4   | 896.7  | 903.1  | 892.8  | 966.3  |
| 5°    | 1019.2  | 988.2  | 969.5  | 976.0   | 963.7   | 978.5   | 978.5   | 1021.1 | 1077.8 | 1143.6 | 1237.0 |
| 7.5°  | 1041.7  | 1019.2 | 997.9  | 1014.0  | 1016.6  | 1002.4  | 1015.9  | 1115.8 | 1218.3 | 1284.1 | 1433.6 |
| 10°   | 996.6   | 974.0  | 990.1  | 995.3   | 994.7   | 1026.9  | 1097.1  | 1177.1 | 1291.2 | 1412.4 | 1492.9 |
| 12.5° | 988.2   | 1004.3 | 1012.1 | 1021.1  | 1082.3  | 1092.0  | 1198.4  | 1280.9 | 1395.6 | 1502.0 | 1711.5 |
| 15°   | 1112.6  | 1133.9 | 1086.2 | 1083.0  | 1103.0  | 1112.0  | 1222.2  | 1305.4 | 1473.0 | 1651.5 | 1839.8 |
| 17.5° | 1289.9  | 1297.6 | 1211.9 | 1168.1  | 1182.9  | 1190.0  | 1238.3  | 1342.8 | 1445.9 | 1775.9 | 2010.6 |
| 20°   | 1461.4  | 1466.5 | 1305.4 | 1207.4  | 1259.6  | 1267.3  | 1312.5  | 1372.4 | 1453.6 | 1845.6 | 2126.0 |
| 22.5° | 1641.2  | 1608.3 | 1431.7 | 1307.9  | 1338.2  | 1340.2  | 1366.6  | 1399.5 | 1514.9 | 1834.6 | 2266.5 |
| 25°   | 1837.8  | 1817.2 | 1594.8 | 1476.2  | 1474.9  | 1448.5  | 1449.8  | 1496.8 | 1580.0 | 1951.9 | 2358.7 |
| 27.5° | 2098.9  | 2101.5 | 1778.5 | 1714.7  | 1614.8  | 1597.4  | 1510.4  | 1598.0 | 1692.8 | 1953.2 | 2557.9 |
| 30°   | 2437.3  | 2374.8 | 2034.4 | 1931.3  | 1832.7  | 1795.9  | 1678.0  | 1752.7 | 1794.0 | 2064.7 | 2774.5 |
| 32.5° | 2712.6  | 2694.5 | 2301.3 | 2145.3  | 1984.2  | 2026.7  | 1896.5  | 1830.7 | 1904.9 | 2256.8 | 3102.6 |
| 35°   | 2976.2  | 2916.9 | 2583.7 | 2380.6  | 2211.1  | 2185.3  | 2100.8  | 2111.8 | 2156.9 | 2499.9 | 3531.2 |
| 37.5° | 3369.4  | 3337.2 | 2983.3 | 2658.4  | 2579.1  | 2474.1  | 2420.6  | 2454.7 | 2419.3 | 2811.2 | 4173.9 |
| 40°   | 3809.1  | 3622.1 | 3317.2 | 3027.8  | 2879.5  | 2805.4  | 2824.1  | 2791.9 | 2764.8 | 3160.6 | 4750.2 |
| 42.5° | 4230.0  | 4059.8 | 3539.0 | 3408.8  | 3215.4  | 3246.3  | 3143.8  | 3166.4 | 3243.1 | 3656.3 | 5283.3 |
| 45°   | 4688.3  | 4320.3 | 3774.3 | 3659.5  | 3520.9  | 3560.3  | 3642.1  | 3617.6 | 3743.3 | 4241.0 | 5785.5 |
| 47.5° | 4917.2  | 4567.2 | 4063.1 | 3876.1  | 3874.2  | 3792.3  | 4290.6  | 4344.8 | 4148.2 | 4674.2 | 6295.4 |
| 50°   | 5137.7  | 4793.4 | 4277.7 | 4151.4  | 4059.8  | 4235.2  | 4912.7  | 4788.3 | 4514.3 | 5171.2 | 6856.2 |
| 52.5° | 5444.5  | 5051.9 | 4524.0 | 4389.2  | 4502.7  | 4665.1  | 5409.0  | 5384.5 | 4873.4 | 5682.4 | 7343.6 |
| 55°   | 5678.5  | 5282.0 | 4894.6 | 4769.6  | 4986.2  | 5145.4  | 5914.4  | 5766.8 | 5180.8 | 6057.5 | 7652.3 |
| 57.5° | 6088.5  | 5681.7 | 5441.9 | 5164.1  | 5553.4  | 5550.9  | 6401.8  | 6287.7 | 5509.6 | 6365.7 | 7776.7 |
| 60°   | 6740.2  | 6262.5 | 6011.8 | 5691.4  | 6108.5  | 6257.4  | 6958.7  | 6630.0 | 5742.3 | 6560.3 | 7552.4 |
| 62.5° | 7654.9  | 7087.6 | 6680.9 | 6363.7  | 6872.3  | 7141.8  | 7646.5  | 6879.4 | 5757.1 | 6504.9 | 6962.6 |
| 65°   | 8786.2  | 8096.5 | 7563.4 | 7228.2  | 8067.5  | 8452.3  | 8478.1  | 7033.5 | 5620.5 | 5931.8 | 5722.3 |
| 67.5° | 9889.8  | 9114.3 | 8558.0 | 8621.8  | 9847.3  | 10029.7 | 9379.3  | 7162.4 | 4886.2 | 4763.1 | 3973.5 |
| 70°   | 10616.3 | 9775.7 | 9405.1 | 10081.9 | 11943.6 | 11756.7 | 10109.6 | 6822.7 | 3847.8 | 3087.7 | 2237.5 |
| 72.5° | 10561.5 | 9681.6 | 9548.2 | 10949.6 | 13443.0 | 13326.3 | 10198.6 | 5425.8 | 2577.2 | 1688.3 | 1115.8 |
| 75°   | 8604.4  | 7920.5 | 8223.5 | 10365.6 | 13011.1 | 13005.3 | 8854.6  | 3358.5 | 1322.1 | 867.0  | 705.2  |
| 77.5° | 4757.3  | 4491.7 | 5382.0 | 7848.3  | 10359.8 | 10412.6 | 5982.8  | 1523.2 | 713.0  | 614.3  | 531.2  |
| 80°   | 1666.4  | 1641.9 | 2332.2 | 4235.2  | 6815.0  | 6827.9  | 2782.2  | 696.8  | 518.3  | 464.8  | 390.0  |
| 82.5° | 609.2   | 604.0  | 966.9  | 1967.4  | 3752.4  | 3744.0  | 1055.2  | 433.8  | 384.2  | 328.8  | 257.2  |
| 85°   | 243.0   | 237.9  | 442.2  | 873.5   | 1723.7  | 1696.0  | 410.0   | 246.2  | 251.4  | 196.0  | 126.3  |
| 87.5° | 67.0    | 69.6   | 150.2  | 273.3   | 527.9   | 489.3   | 103.1   | 83.2   | 101.9  | 79.9   | 40.0   |
| 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°    | 814.8  | 814.8  | 814.8  | 814.8  | 814.8  | 814.8  | 814.8  | 814.8  | 814.8  | 814.8  | 814.8  |
| 2.5°  | 979.2  | 985.6  | 921.8  | 944.4  | 973.4  | 988.9  | 996.6  | 963.7  | 974.7  | 1021.1 | 1019.2 |
| 5°    | 1256.4 | 1230.6 | 1206.1 | 1231.2 | 1214.5 | 1190.6 | 1229.3 | 1227.4 | 1252.5 | 1277.6 | 1283.4 |
| 7.5°  | 1463.3 | 1429.8 | 1418.2 | 1361.4 | 1304.7 | 1247.3 | 1297.0 | 1327.9 | 1334.4 | 1396.9 | 1423.3 |
| 10°   | 1538.1 | 1525.2 | 1529.7 | 1454.9 | 1447.8 | 1453.6 | 1407.9 | 1358.2 | 1388.5 | 1362.7 | 1382.1 |
| 12.5° | 1710.8 | 1743.1 | 1663.1 | 1612.2 | 1607.7 | 1572.2 | 1480.7 | 1448.5 | 1414.3 | 1449.8 | 1431.7 |
| 15°   | 1849.4 | 1909.4 | 1823.6 | 1734.0 | 1632.8 | 1578.0 | 1500.0 | 1451.0 | 1428.5 | 1436.2 | 1414.3 |
| 17.5° | 2052.5 | 2108.6 | 1890.7 | 1753.4 | 1648.9 | 1568.4 | 1449.1 | 1344.7 | 1400.1 | 1404.6 | 1379.5 |
| 20°   | 2187.2 | 2191.1 | 1913.2 | 1705.7 | 1611.6 | 1471.7 | 1355.6 | 1264.1 | 1327.9 | 1393.0 | 1421.4 |
| 22.5° | 2318.7 | 2289.7 | 1941.0 | 1667.6 | 1475.5 | 1340.2 | 1283.4 | 1277.6 | 1325.3 | 1380.1 | 1386.6 |
| 25°   | 2417.3 | 2421.9 | 1957.1 | 1653.5 | 1395.6 | 1211.2 | 1211.2 | 1253.1 | 1295.0 | 1425.3 | 1418.8 |
| 27.5° | 2656.5 | 2480.5 | 1894.5 | 1588.4 | 1284.7 | 1135.8 | 1211.9 | 1268.0 | 1288.0 | 1429.1 | 1443.3 |
| 30°   | 2830.5 | 2715.8 | 1907.4 | 1476.8 | 1172.6 | 1100.4 | 1162.9 | 1233.2 | 1288.6 | 1451.7 | 1446.5 |
| 32.5° | 3122.6 | 2813.8 | 1937.7 | 1320.2 | 1088.8 | 1086.8 | 1142.3 | 1216.4 | 1282.8 | 1427.2 | 1434.9 |
| 35°   | 3445.5 | 3102.6 | 1853.3 | 1200.9 | 1068.8 | 1079.1 | 1150.7 | 1180.3 | 1258.3 | 1417.5 | 1424.6 |
| 37.5° | 4043.1 | 3253.4 | 1799.8 | 1108.8 | 1055.9 | 1085.5 | 1112.6 | 1158.4 | 1237.0 | 1369.2 | 1415.6 |
| 40°   | 4393.8 | 3564.1 | 1601.2 | 1055.2 | 1028.8 | 1080.4 | 1093.9 | 1132.6 | 1175.1 | 1311.2 | 1340.8 |
| 42.5° | 4855.3 | 3662.1 | 1431.7 | 995.9  | 1015.3 | 1059.1 | 1099.7 | 1109.4 | 1137.8 | 1219.6 | 1273.8 |
| 45°   | 5240.1 | 3735.6 | 1251.9 | 948.2  | 969.5  | 1106.2 | 1108.8 | 1104.2 | 1099.1 | 1129.4 | 1173.9 |
| 47.5° | 5638.5 | 3932.9 | 1086.2 | 895.4  | 952.1  | 1144.9 | 1113.3 | 1072.0 | 1050.7 | 1054.6 | 1095.9 |
| 50°   | 6078.2 | 4076.0 | 968.9  | 852.2  | 956.0  | 1144.9 | 1135.2 | 1039.1 | 996.6  | 985.6  | 1028.8 |
| 52.5° | 6464.9 | 4092.7 | 879.9  | 817.4  | 939.9  | 1105.5 | 1150.0 | 1018.5 | 947.0  | 920.5  | 961.1  |
| 55°   | 6675.7 | 3880.6 | 815.4  | 785.8  | 898.6  | 1070.1 | 1142.3 | 1006.9 | 887.0  | 867.0  | 903.1  |
| 57.5° | 6671.2 | 3528.7 | 760.7  | 742.0  | 851.5  | 1020.4 | 1099.1 | 943.7  | 850.3  | 838.7  | 874.1  |
| 60°   | 6430.8 | 3116.1 | 718.8  | 705.9  | 803.2  | 948.2  | 1021.7 | 902.5  | 814.8  | 809.0  | 847.7  |
| 62.5° | 5885.4 | 2690.0 | 678.1  | 667.8  | 758.1  | 897.3  | 985.0  | 856.7  | 778.1  | 777.4  | 814.2  |
| 65°   | 4819.9 | 2159.5 | 640.1  | 637.5  | 716.2  | 847.0  | 950.2  | 818.0  | 740.0  | 752.9  | 790.3  |
| 67.5° | 3321.1 | 1517.4 | 599.5  | 607.2  | 677.5  | 798.7  | 923.7  | 792.2  | 700.1  | 726.5  | 760.0  |
| 70°   | 1822.4 | 938.6  | 554.4  | 569.8  | 628.5  | 742.6  | 882.5  | 750.3  | 647.8  | 688.5  | 711.7  |
| 72.5° | 927.0  | 625.9  | 498.3  | 522.8  | 568.6  | 660.1  | 805.1  | 689.7  | 591.8  | 607.2  | 619.5  |
| 75°   | 622.7  | 471.2  | 435.8  | 462.8  | 495.7  | 581.5  | 714.2  | 633.0  | 538.3  | 536.3  | 549.9  |
| 77.5° | 470.6  | 368.1  | 370.0  | 401.0  | 422.2  | 511.2  | 642.0  | 585.3  | 493.1  | 488.6  | 508.6  |
| 80°   | 344.2  | 279.1  | 297.8  | 330.0  | 349.4  | 459.0  | 595.0  | 532.5  | 431.9  | 413.8  | 430.6  |
| 82.5° | 228.2  | 197.9  | 220.5  | 252.7  | 268.2  | 383.6  | 540.2  | 451.9  | 352.0  | 306.2  | 308.8  |
| 85°   | 107.7  | 103.8  | 131.5  | 147.0  | 167.0  | 237.9  | 404.2  | 312.6  | 224.3  | 185.7  | 194.0  |
| 87.5° | 24.5   | 32.9   | 43.2   | 42.5   | 49.6   | 63.8   | 125.7  | 87.7   | 65.1   | 44.5   | 29.7   |
| 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)