

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: LUMARK

Report Number: P197120

Luminaire Tested: **NAV-AF-02-D-UNV-SL4-8030-800-HSS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P197120  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24285)  
Test Lab: INNOVATION CENTER P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: LUMARK  
Catalog Number: NAV-AF-02-D-UNV-SL4-8030-800-HSS  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(2) 80 CRI, 3000K, 800mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV SPILL  
LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6542 lumens  
Efficiency: N/A  
Efficacy: 77.0 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')  
IES Classification: Type IV - Short - Non-Cutoff  
BUG Rating: B1 - U0 - G2

Input Watts (W): 85  
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: 25 FT

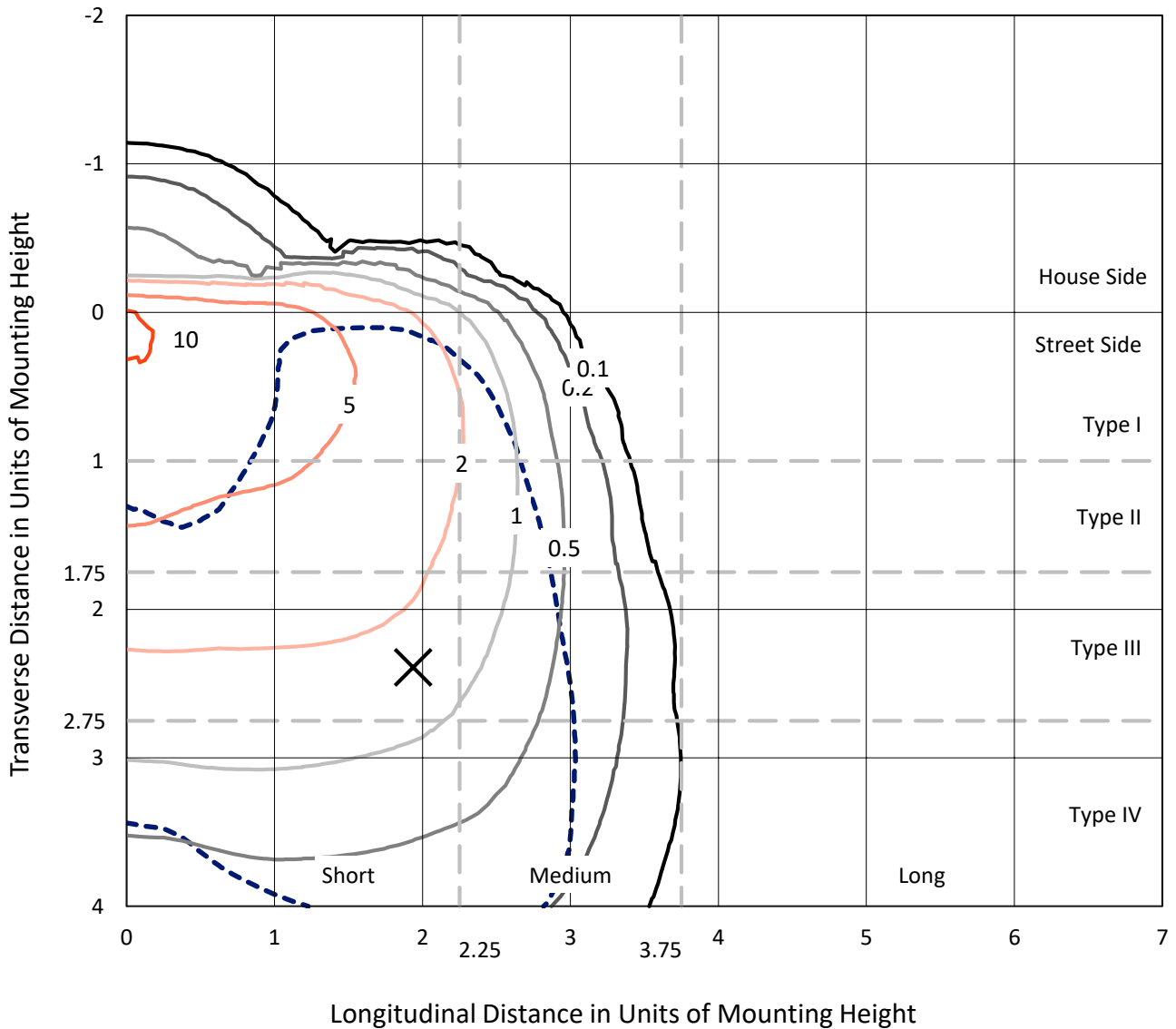


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### Iso-Footcandle Lines of Horizontal Illumination

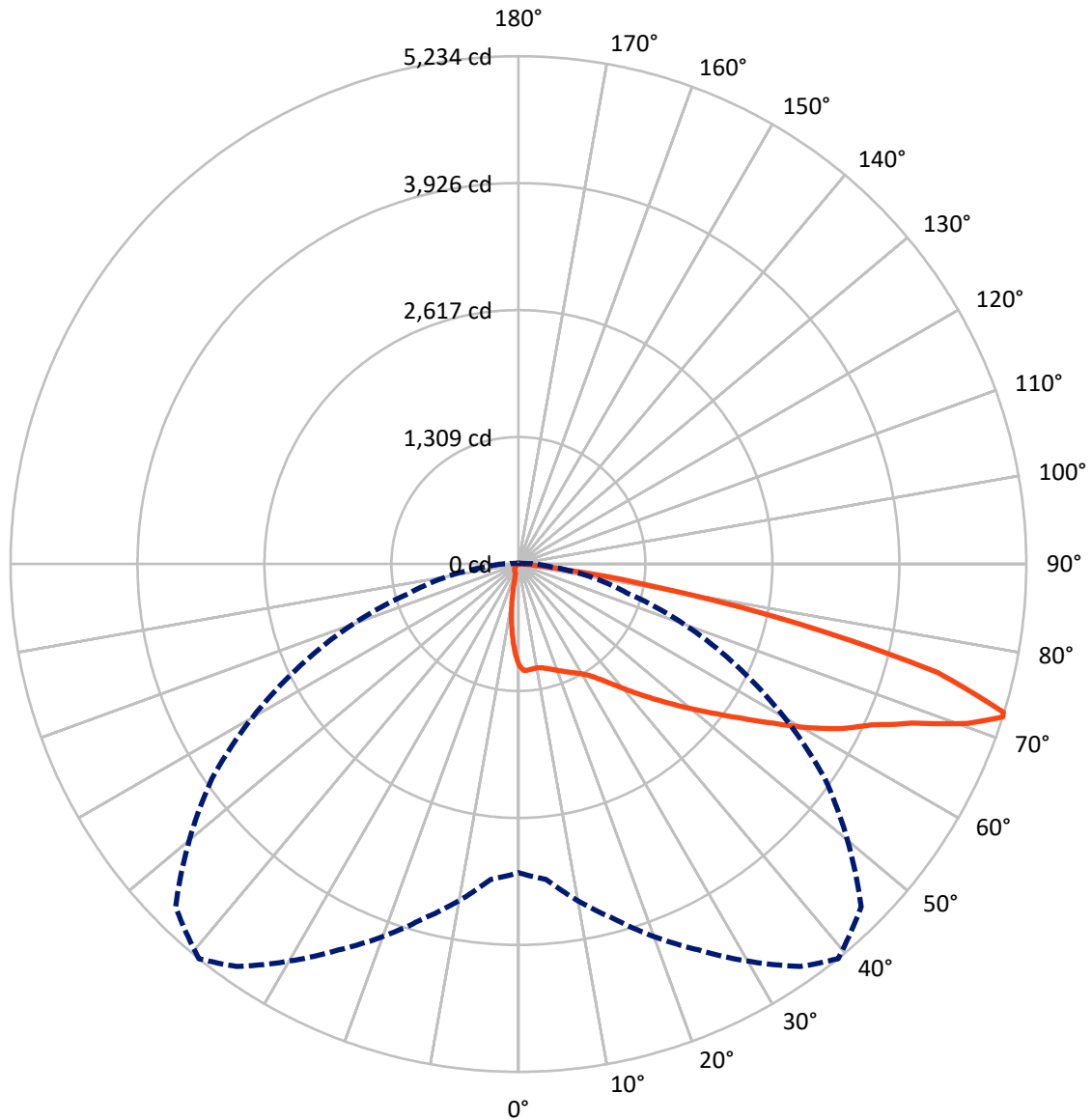
× Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 11 fc  
 Type IV - Short - Non-Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 39-Deg Lateral    - - - Horizontal Cone Through 72-Deg Vertical

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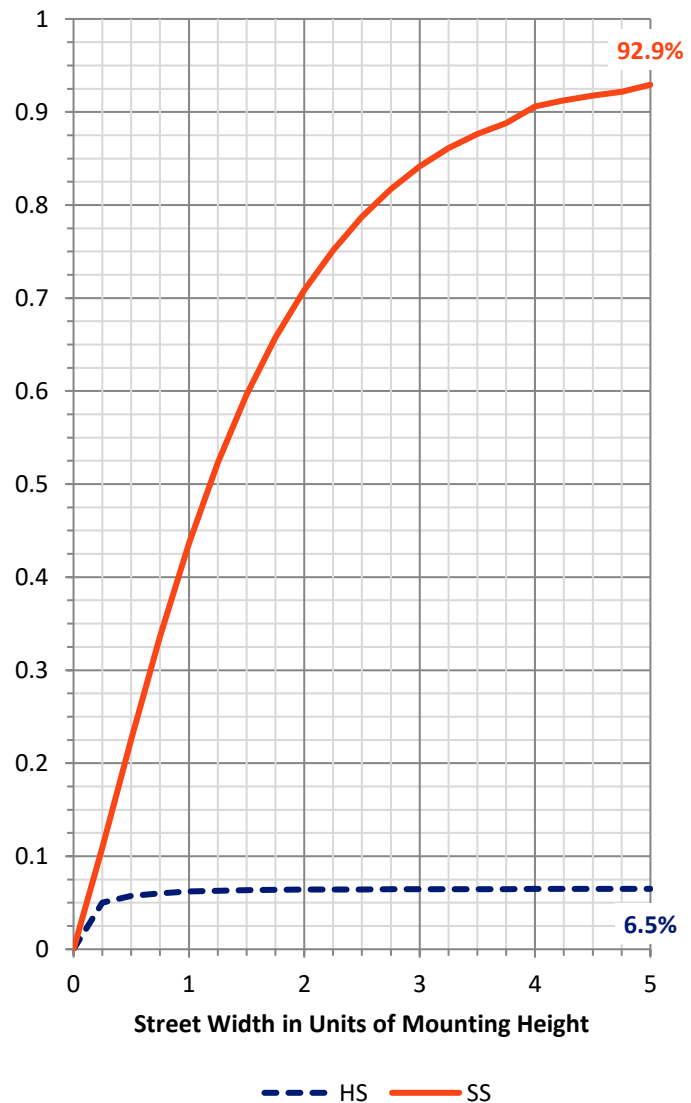
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 428.7    | 0.0    | 428.7  |
|                    | % Fixture | 6.6      | 0.0    | 6.6    |
| <b>Street Side</b> | Lumens    | 6113.2   | 0.0    | 6113.2 |
|                    | % Fixture | 93.4     | 0.0    | 93.4   |
| <b>Total</b>       | Lumens    | 6542.0   | 0.0    | 6542.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 85.2   | 1.3       |
| 10°-20°   | 206.2  | 3.2       |
| 20°-30°   | 342.4  | 5.2       |
| 30°-40°   | 545.8  | 8.3       |
| 40°-50°   | 900.9  | 13.8      |
| 50°-60°   | 1360.5 | 20.8      |
| 60°-70°   | 1772.3 | 27.1      |
| 70°-80°   | 1197.5 | 18.3      |
| 80°-90°   | 131.2  | 2.0       |
| 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°    | 6542.0 | 100.0     |
| 0°-180°   | 6542.0 | 100.0     |

**Coefficient of Utilization**



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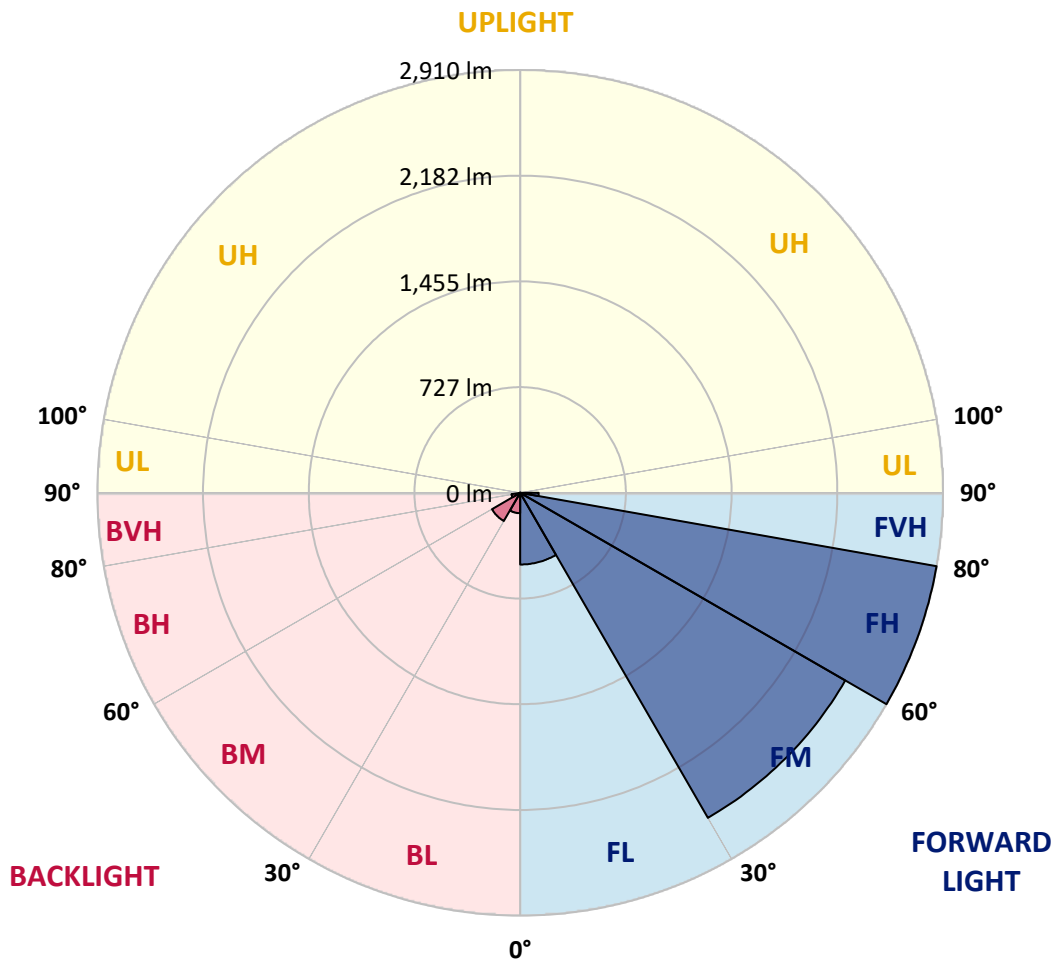
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 493.4  | 7.5       |                         |      |         |
| FM   | (30°-60°)   | 2582.9 | 39.5      |                         |      |         |
| FH   | (60°-80°)   | 2909.6 | 44.5      |                         |      | G2/5000 |
| FVH  | (80°-90°)   | 127.4  | 1.9       |                         |      | G2/225  |
| BL   | (0°-30°)    | 140.4  | 2.1       | B1/500                  |      |         |
| BM   | (30°-60°)   | 224.3  | 3.4       | B1/1000                 |      |         |
| BH   | (60°-80°)   | 60.3   | 0.9       | B0/110                  |      | G0/110  |
| BVH  | (80°-90°)   | 3.8    | 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 IV Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 39°    | 45°    | 55°    | 65°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1047.1 | 1047.1 | 1047.1 | 1047.1 | 1047.1 | 1047.1 | 1047.1 | 1047.1 | 1047.1 | 1047.1 | 1047.1 |
| 2.5°  | 1115.0 | 1117.0 | 1114.5 | 1109.8 | 1103.1 | 1099.0 | 1093.4 | 1081.0 | 1065.6 | 1052.2 | 1036.8 |
| 5°    | 1123.7 | 1124.7 | 1121.7 | 1112.9 | 1102.6 | 1097.0 | 1089.8 | 1076.4 | 1060.5 | 1041.9 | 1014.2 |
| 7.5°  | 1126.3 | 1125.8 | 1122.2 | 1111.4 | 1095.4 | 1088.2 | 1075.9 | 1059.4 | 1043.0 | 1026.0 | 994.6  |
| 10°   | 1125.3 | 1125.3 | 1122.7 | 1112.4 | 1094.4 | 1087.7 | 1073.8 | 1056.3 | 1035.8 | 1018.8 | 985.4  |
| 12.5° | 1121.7 | 1123.7 | 1122.2 | 1116.5 | 1103.1 | 1098.0 | 1085.7 | 1068.2 | 1048.6 | 1031.1 | 995.7  |
| 15°   | 1126.3 | 1129.4 | 1132.5 | 1130.4 | 1122.7 | 1118.1 | 1106.7 | 1088.7 | 1072.8 | 1054.3 | 1016.2 |
| 17.5° | 1144.8 | 1151.5 | 1158.7 | 1159.2 | 1151.0 | 1142.7 | 1129.9 | 1111.4 | 1095.9 | 1079.0 | 1037.8 |
| 20°   | 1179.8 | 1184.9 | 1198.3 | 1200.9 | 1184.4 | 1172.6 | 1154.6 | 1133.0 | 1117.5 | 1103.1 | 1057.9 |
| 22.5° | 1231.7 | 1237.4 | 1248.2 | 1244.6 | 1216.8 | 1202.9 | 1180.3 | 1155.6 | 1139.7 | 1131.4 | 1081.0 |
| 25°   | 1310.4 | 1311.9 | 1314.5 | 1298.6 | 1252.8 | 1237.4 | 1209.6 | 1181.8 | 1169.0 | 1167.9 | 1113.9 |
| 27.5° | 1403.0 | 1405.0 | 1393.7 | 1358.2 | 1292.9 | 1272.9 | 1241.5 | 1216.3 | 1210.1 | 1217.8 | 1155.6 |
| 30°   | 1508.9 | 1509.4 | 1478.1 | 1420.5 | 1339.2 | 1317.1 | 1284.7 | 1256.9 | 1262.6 | 1281.6 | 1209.1 |
| 32.5° | 1617.4 | 1612.3 | 1569.1 | 1494.0 | 1402.5 | 1375.7 | 1347.9 | 1320.2 | 1336.6 | 1375.2 | 1287.3 |
| 35°   | 1716.7 | 1714.6 | 1663.7 | 1576.3 | 1484.7 | 1461.1 | 1441.0 | 1411.7 | 1438.5 | 1501.2 | 1393.7 |
| 37.5° | 1815.9 | 1814.4 | 1756.3 | 1665.3 | 1586.1 | 1569.1 | 1554.2 | 1531.5 | 1575.3 | 1667.3 | 1536.2 |
| 40°   | 1925.5 | 1922.9 | 1851.4 | 1764.0 | 1703.8 | 1694.6 | 1685.8 | 1676.1 | 1750.6 | 1878.7 | 1713.6 |
| 42.5° | 2060.8 | 2049.4 | 1952.2 | 1871.5 | 1833.4 | 1836.0 | 1836.5 | 1846.3 | 1963.0 | 2130.2 | 1922.9 |
| 45°   | 2216.1 | 2190.9 | 2053.6 | 1986.7 | 1975.9 | 1991.3 | 2006.7 | 2047.4 | 2210.4 | 2419.7 | 2154.4 |
| 47.5° | 2366.8 | 2326.1 | 2170.3 | 2110.6 | 2132.8 | 2164.6 | 2201.7 | 2280.9 | 2488.1 | 2722.6 | 2364.2 |
| 50°   | 2496.4 | 2454.7 | 2286.0 | 2236.6 | 2307.1 | 2354.4 | 2420.2 | 2540.1 | 2781.3 | 2978.8 | 2496.4 |
| 52.5° | 2598.2 | 2565.3 | 2408.4 | 2375.5 | 2500.5 | 2565.3 | 2668.6 | 2826.0 | 3058.0 | 3147.4 | 2588.9 |
| 55°   | 2673.3 | 2656.8 | 2525.7 | 2530.3 | 2715.4 | 2809.0 | 2937.6 | 3115.6 | 3291.4 | 3278.6 | 2658.4 |
| 57.5° | 2758.1 | 2745.3 | 2648.6 | 2712.9 | 2974.1 | 3095.0 | 3243.6 | 3386.6 | 3461.2 | 3384.0 | 2726.2 |
| 60°   | 2845.0 | 2849.2 | 2797.7 | 2934.0 | 3294.0 | 3427.7 | 3557.3 | 3592.8 | 3606.7 | 3491.0 | 2797.7 |
| 62.5° | 2910.9 | 2928.4 | 2933.0 | 3172.6 | 3622.1 | 3736.3 | 3792.4 | 3767.2 | 3764.1 | 3634.5 | 2792.1 |
| 65°   | 2986.5 | 3032.2 | 3108.4 | 3434.4 | 3920.4 | 3995.5 | 4035.6 | 4072.1 | 3995.0 | 3677.2 | 2517.4 |
| 67.5° | 3117.1 | 3189.1 | 3360.4 | 3755.3 | 4265.0 | 4376.1 | 4489.7 | 4451.2 | 4029.4 | 3243.6 | 1917.8 |
| 70°   | 3293.0 | 3380.9 | 3683.3 | 4174.5 | 4732.5 | 4918.6 | 5013.8 | 4420.8 | 3421.0 | 2241.3 | 1011.6 |
| 72°   | 3181.9 | 3261.6 | 3783.1 | 4388.4 | 5063.7 | 5234.4 | 4996.3 | 3856.1 | 2479.9 | 1161.8 | 338.9  |
| 72.5° | 3073.9 | 3156.2 | 3751.2 | 4385.8 | 5096.6 | 5227.2 | 4882.6 | 3633.4 | 2194.5 | 904.1  | 233.5  |
| 75°   | 2132.8 | 2236.6 | 3215.8 | 3942.5 | 4602.4 | 4458.9 | 3735.8 | 2200.1 | 795.1  | 155.3  | 77.1   |
| 77.5° | 1102.6 | 1182.9 | 1950.7 | 2785.9 | 3207.6 | 2937.6 | 2207.8 | 954.5  | 220.1  | 82.3   | 50.9   |
| 80°   | 683.5  | 723.1  | 912.3  | 1372.6 | 1666.3 | 1457.5 | 974.1  | 385.7  | 140.9  | 48.9   | 40.6   |
| 82.5° | 353.8  | 384.2  | 574.5  | 553.9  | 615.6  | 511.7  | 359.5  | 323.0  | 86.9   | 30.3   | 41.7   |
| 85°   | 116.2  | 123.4  | 352.8  | 368.2  | 263.3  | 176.9  | 159.4  | 308.1  | 25.2   | 19.5   | 35.5   |
| 87.5° | 15.4   | 18.0   | 123.9  | 210.9  | 129.6  | 80.2   | 95.7   | 108.5  | 8.7    | 10.8   | 9.8    |
| 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°    | 1047.1 | 1047.1 | 1047.1 | 1047.1 | 1047.1 | 1047.1 | 1047.1 | 1047.1 | 1047.1 | 1047.1 | 1047.1 |
| 2.5°  | 1026.5 | 1019.8 | 998.7  | 977.7  | 953.5  | 931.4  | 913.9  | 902.6  | 907.7  | 890.7  | 893.3  |
| 5°    | 997.2  | 980.2  | 933.9  | 884.1  | 830.1  | 779.7  | 739.5  | 709.7  | 704.1  | 678.3  | 679.4  |
| 7.5°  | 968.9  | 941.1  | 866.1  | 783.8  | 694.3  | 621.8  | 555.9  | 498.3  | 477.8  | 456.7  | 444.3  |
| 10°   | 953.5  | 915.4  | 809.0  | 689.1  | 563.1  | 456.7  | 364.1  | 291.6  | 261.3  | 239.1  | 228.3  |
| 12.5° | 958.1  | 907.7  | 766.3  | 603.3  | 437.7  | 302.4  | 205.7  | 152.7  | 134.2  | 123.9  | 120.3  |
| 15°   | 973.5  | 909.3  | 727.7  | 519.4  | 318.3  | 183.1  | 120.9  | 103.4  | 101.8  | 101.3  | 100.8  |
| 17.5° | 987.9  | 910.8  | 687.1  | 432.0  | 212.9  | 116.7  | 97.2   | 95.7   | 95.7   | 95.7   | 95.7   |
| 20°   | 1002.9 | 911.3  | 642.3  | 340.5  | 139.9  | 95.7   | 91.5   | 90.5   | 91.5   | 91.5   | 91.5   |
| 22.5° | 1020.3 | 914.9  | 599.1  | 251.5  | 103.4  | 90.0   | 87.4   | 86.9   | 87.4   | 87.4   | 86.9   |
| 25°   | 1041.9 | 922.6  | 552.3  | 180.0  | 93.6   | 86.4   | 83.8   | 83.3   | 83.8   | 83.3   | 83.3   |
| 27.5° | 1070.7 | 932.9  | 497.8  | 129.1  | 89.5   | 82.8   | 80.2   | 80.2   | 80.2   | 79.7   | 79.7   |
| 30°   | 1107.8 | 945.3  | 424.8  | 101.8  | 85.4   | 79.2   | 77.1   | 77.1   | 76.6   | 76.1   | 76.1   |
| 32.5° | 1160.7 | 965.3  | 345.1  | 92.1   | 80.7   | 74.6   | 72.5   | 73.0   | 72.5   | 72.0   | 71.5   |
| 35°   | 1235.8 | 996.7  | 266.4  | 86.9   | 76.1   | 69.9   | 67.9   | 67.9   | 67.9   | 66.9   | 66.9   |
| 37.5° | 1342.3 | 1044.5 | 199.5  | 81.8   | 71.5   | 65.3   | 62.7   | 62.7   | 62.2   | 61.2   | 61.7   |
| 40°   | 1473.9 | 1104.7 | 144.5  | 77.1   | 66.9   | 60.2   | 58.1   | 57.1   | 56.1   | 55.0   | 55.0   |
| 42.5° | 1632.3 | 1163.3 | 108.5  | 72.5   | 62.2   | 56.1   | 53.5   | 52.5   | 50.4   | 49.4   | 48.9   |
| 45°   | 1809.8 | 1225.5 | 90.0   | 66.9   | 57.1   | 51.4   | 49.4   | 47.3   | 44.7   | 43.2   | 42.7   |
| 47.5° | 1959.4 | 1263.6 | 80.2   | 61.2   | 51.9   | 46.8   | 44.7   | 41.7   | 38.6   | 37.5   | 37.5   |
| 50°   | 2049.4 | 1247.7 | 72.0   | 55.5   | 46.8   | 42.2   | 39.6   | 35.5   | 33.4   | 32.4   | 31.9   |
| 52.5° | 2099.8 | 1200.3 | 65.3   | 50.9   | 42.2   | 37.0   | 33.4   | 29.8   | 28.8   | 27.8   | 27.8   |
| 55°   | 2134.3 | 1131.9 | 58.1   | 46.3   | 38.1   | 32.4   | 28.3   | 25.7   | 24.7   | 24.2   | 23.7   |
| 57.5° | 2167.2 | 1048.6 | 51.4   | 42.2   | 33.9   | 28.8   | 24.2   | 23.1   | 21.1   | 20.6   | 20.6   |
| 60°   | 2177.0 | 933.9  | 45.3   | 37.5   | 30.3   | 25.2   | 21.1   | 19.5   | 17.5   | 17.0   | 17.0   |
| 62.5° | 2052.5 | 743.1  | 40.1   | 31.9   | 26.7   | 21.6   | 18.5   | 16.5   | 14.4   | 14.4   | 14.4   |
| 65°   | 1715.1 | 504.5  | 34.5   | 27.8   | 23.7   | 18.5   | 15.9   | 13.4   | 12.3   | 12.3   | 12.3   |
| 67.5° | 1194.7 | 281.3  | 29.3   | 23.7   | 20.1   | 15.4   | 13.4   | 11.3   | 10.8   | 11.3   | 11.3   |
| 70°   | 538.5  | 111.6  | 24.7   | 19.5   | 16.5   | 12.9   | 11.3   | 9.8    | 10.8   | 10.8   | 10.8   |
| 72°   | 161.5  | 59.7   | 20.6   | 15.9   | 13.4   | 11.3   | 9.8    | 9.3    | 10.3   | 10.8   | 10.8   |
| 72.5° | 119.8  | 53.5   | 19.5   | 15.4   | 13.4   | 10.8   | 9.3    | 9.3    | 10.3   | 10.8   | 10.8   |
| 75°   | 61.7   | 36.5   | 14.9   | 11.3   | 9.8    | 8.7    | 7.7    | 8.7    | 10.3   | 10.3   | 10.3   |
| 77.5° | 48.3   | 29.8   | 12.3   | 8.7    | 8.2    | 7.7    | 7.2    | 8.2    | 9.3    | 9.3    | 9.3    |
| 80°   | 45.3   | 19.5   | 9.8    | 8.2    | 7.2    | 6.7    | 6.7    | 7.2    | 8.2    | 8.7    | 8.7    |
| 82.5° | 45.8   | 15.9   | 8.7    | 7.7    | 6.7    | 6.2    | 6.2    | 6.7    | 7.7    | 8.2    | 8.2    |
| 85°   | 29.3   | 10.8   | 7.7    | 6.7    | 6.2    | 5.7    | 5.7    | 6.2    | 7.2    | 7.7    | 7.7    |
| 87.5° | 9.8    | 8.2    | 6.7    | 6.2    | 5.1    | 5.1    | 5.1    | 5.1    | 6.2    | 6.7    | 7.2    |
| 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)