

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: P195920

Luminaire Tested: **NAV-AF-02-D-UNV-5MQ-800**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P195920  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24129)  
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-5MQ-800  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(2) 70 CRI, 4000K, 800mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE V MEDIUM OPTICS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 10721.5 lumens  
Efficiency: N/A  
Efficacy: 126.1 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')  
IES Classification: Type V - Short - Full Cutoff  
BUG Rating: B4 - U0 - G2

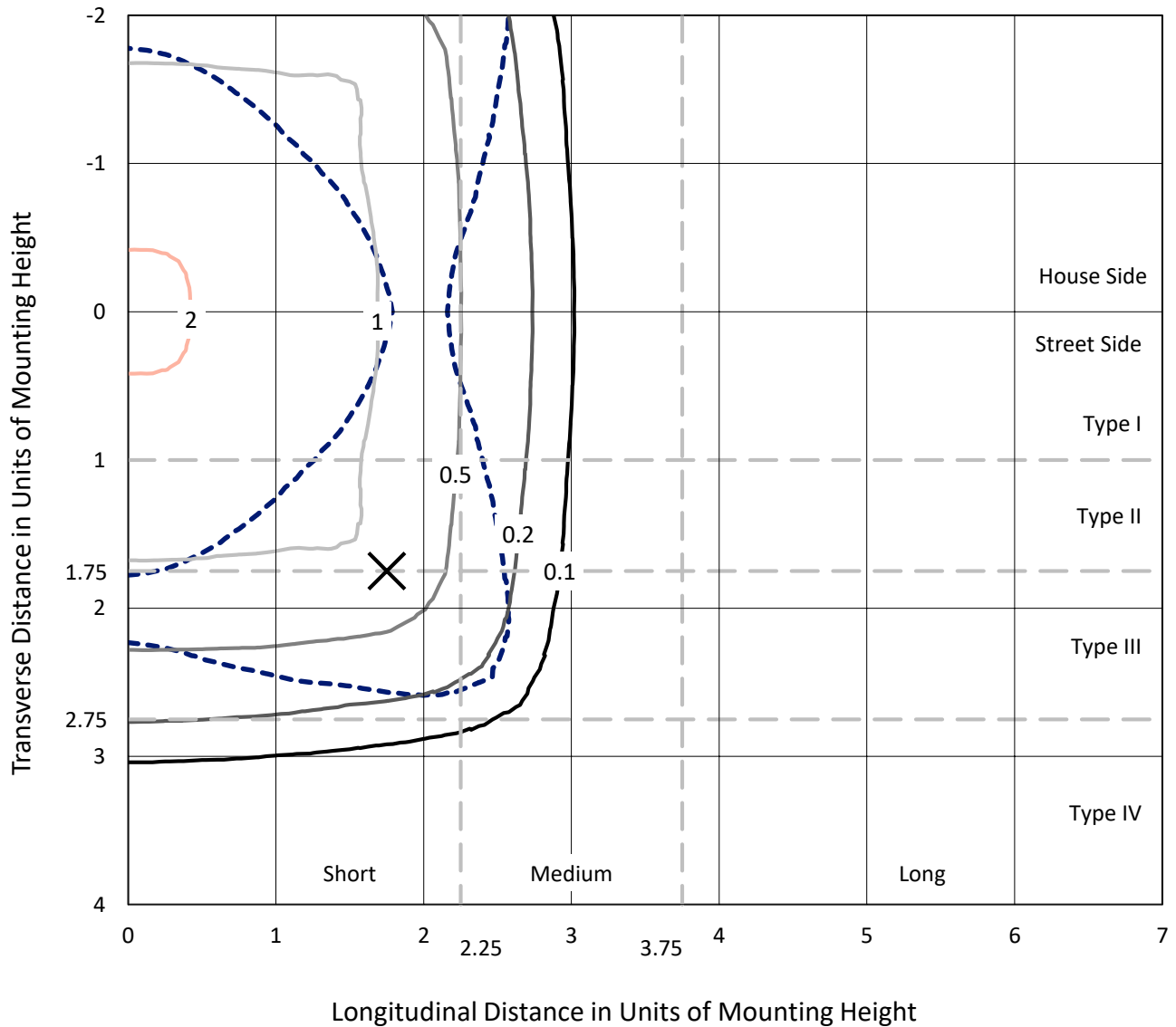
Input Watts (W): 85  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

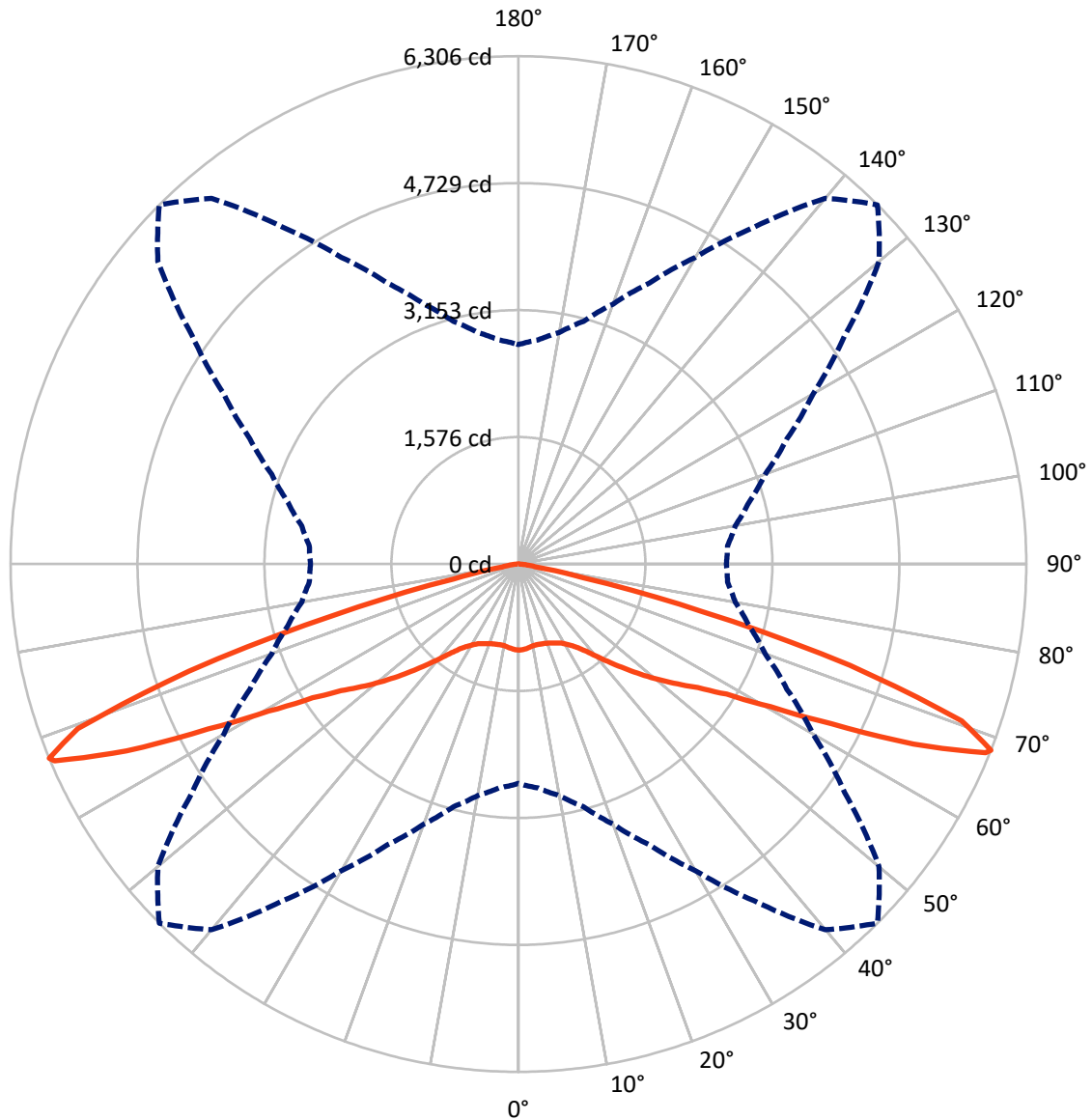
× Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 2.7 fc  
 Type V - Short - Full Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 45-Deg Lateral      - - - Horizontal Cone Through 68-Deg Vertical

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**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 5360.8   | 0.0    | 5360.8  |
|                    | % Fixture | 50.0     | 0.0    | 50.0    |
| <b>Street Side</b> | Lumens    | 5360.8   | 0.0    | 5360.8  |
|                    | % Fixture | 50.0     | 0.0    | 50.0    |
| <b>Total</b>       | Lumens    | 10721.5  | 0.0    | 10721.5 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 100.1   | 0.9       |
| 10°-20°   | 290.2   | 2.7       |
| 20°-30°   | 493.4   | 4.6       |
| 30°-40°   | 807.5   | 7.5       |
| 40°-50°   | 1443.1  | 13.5      |
| 50°-60°   | 2437.2  | 22.7      |
| 60°-70°   | 3779.2  | 35.2      |
| 70°-80°   | 1299.4  | 12.1      |
| 80°-90°   | 71.4    | 0.7       |
| 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°    | 10721.5 | 100.0     |
| 0°-180°   | 10721.5 | 100.0     |



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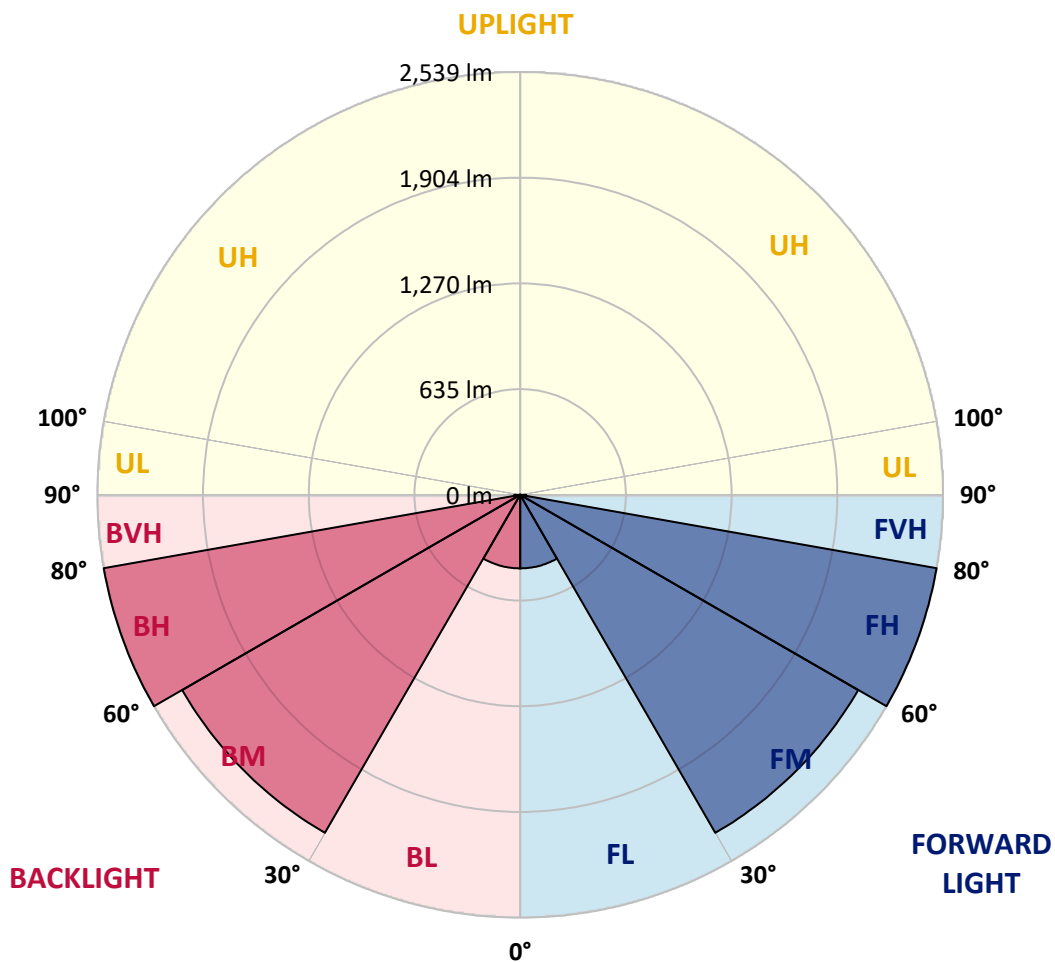
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 441.9  | 4.1       |                         |      |         |
| FM   | (30°-60°)   | 2343.9 | 21.9      |                         |      |         |
| FH   | (60°-80°)   | 2539.3 | 23.7      |                         |      | G2/5000 |
| FVH  | (80°-90°)   | 35.7   | 0.3       |                         |      | G1/100  |
| BL   | (0°-30°)    | 441.9  | 4.1       | B1/500                  |      |         |
| BM   | (30°-60°)   | 2343.9 | 21.9      | B2/2500                 |      |         |
| BH   | (60°-80°)   | 2539.3 | 23.7      | B4/5000                 |      | G2/5000 |
| BVH  | (80°-90°)   | 35.7   | 0.3       |                         |      | G1/100  |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B4-U0-G2**

Type V Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 10°    | 15°    | 20°    | 25°    | 30°    | 35°    | 40°    | 45°    | 50°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1069.5 | 1069.5 | 1069.5 | 1069.5 | 1069.5 | 1069.5 | 1069.5 | 1069.5 | 1069.5 | 1069.5 | 1069.5 |
| 2.5°  | 1074.1 | 1074.1 | 1075.4 | 1074.7 | 1072.8 | 1070.8 | 1068.9 | 1066.8 | 1065.6 | 1064.3 | 1062.9 |
| 5°    | 1062.9 | 1062.9 | 1064.9 | 1063.6 | 1062.3 | 1060.3 | 1059.0 | 1057.0 | 1055.7 | 1054.4 | 1055.1 |
| 7.5°  | 1048.5 | 1049.9 | 1051.1 | 1050.5 | 1047.8 | 1047.2 | 1045.3 | 1044.5 | 1043.2 | 1041.3 | 1042.0 |
| 10°   | 1036.0 | 1036.7 | 1038.0 | 1037.4 | 1036.7 | 1034.7 | 1034.1 | 1033.4 | 1032.8 | 1030.1 | 1029.5 |
| 12.5° | 1023.6 | 1024.9 | 1026.2 | 1026.8 | 1026.2 | 1026.8 | 1027.5 | 1028.2 | 1027.5 | 1026.2 | 1026.2 |
| 15°   | 1013.7 | 1015.0 | 1017.0 | 1019.0 | 1019.6 | 1023.6 | 1026.2 | 1028.8 | 1030.7 | 1031.4 | 1029.5 |
| 17.5° | 1008.4 | 1010.4 | 1013.0 | 1017.0 | 1020.3 | 1024.9 | 1029.5 | 1033.4 | 1036.7 | 1037.4 | 1035.3 |
| 20°   | 1007.8 | 1009.8 | 1013.7 | 1018.2 | 1024.2 | 1030.1 | 1037.4 | 1043.2 | 1046.5 | 1048.5 | 1046.5 |
| 22.5° | 1012.4 | 1015.0 | 1020.3 | 1026.2 | 1033.4 | 1041.3 | 1050.5 | 1057.0 | 1063.6 | 1066.2 | 1064.3 |
| 25°   | 1025.5 | 1028.2 | 1034.1 | 1041.3 | 1049.1 | 1059.0 | 1068.2 | 1076.8 | 1083.3 | 1086.6 | 1083.9 |
| 27.5° | 1053.1 | 1053.7 | 1060.3 | 1068.2 | 1077.4 | 1086.0 | 1097.7 | 1101.7 | 1106.9 | 1110.2 | 1106.9 |
| 30°   | 1091.8 | 1093.1 | 1099.1 | 1111.5 | 1120.0 | 1131.2 | 1137.8 | 1141.7 | 1147.6 | 1150.9 | 1146.9 |
| 32.5° | 1150.9 | 1152.3 | 1157.5 | 1169.3 | 1177.2 | 1185.7 | 1193.6 | 1196.2 | 1202.2 | 1206.1 | 1201.5 |
| 35°   | 1234.3 | 1237.0 | 1241.6 | 1249.4 | 1256.0 | 1262.5 | 1268.5 | 1266.5 | 1270.4 | 1275.6 | 1271.0 |
| 37.5° | 1348.6 | 1347.8 | 1349.2 | 1355.1 | 1361.6 | 1365.6 | 1374.8 | 1370.2 | 1374.1 | 1378.7 | 1376.1 |
| 40°   | 1481.8 | 1481.8 | 1481.1 | 1491.7 | 1494.3 | 1498.2 | 1508.0 | 1502.2 | 1507.4 | 1512.6 | 1508.0 |
| 42.5° | 1633.4 | 1636.1 | 1639.4 | 1647.9 | 1655.1 | 1656.5 | 1661.1 | 1658.4 | 1665.0 | 1669.6 | 1665.0 |
| 45°   | 1808.1 | 1812.1 | 1816.0 | 1835.7 | 1839.0 | 1841.6 | 1844.9 | 1836.3 | 1843.6 | 1847.6 | 1846.2 |
| 47.5° | 1989.3 | 1996.5 | 2005.1 | 2025.4 | 2038.5 | 2044.5 | 2047.1 | 2037.2 | 2037.9 | 2043.9 | 2044.5 |
| 50°   | 2194.1 | 2202.0 | 2210.6 | 2233.5 | 2246.0 | 2256.5 | 2259.8 | 2248.7 | 2250.0 | 2254.6 | 2255.9 |
| 52.5° | 2383.3 | 2392.5 | 2410.8 | 2441.7 | 2459.4 | 2477.8 | 2479.1 | 2465.3 | 2471.2 | 2474.5 | 2471.9 |
| 55°   | 2561.2 | 2573.0 | 2597.3 | 2638.6 | 2670.8 | 2706.9 | 2723.3 | 2708.3 | 2708.3 | 2705.6 | 2704.3 |
| 57.5° | 2768.6 | 2781.8 | 2806.7 | 2854.6 | 2899.2 | 2951.1 | 2995.8 | 3010.9 | 3038.5 | 3047.7 | 3033.3 |
| 60°   | 3081.1 | 3094.9 | 3120.5 | 3183.5 | 3240.0 | 3315.5 | 3389.0 | 3448.8 | 3546.0 | 3598.5 | 3551.3 |
| 62.5° | 3366.7 | 3387.7 | 3448.2 | 3558.4 | 3680.6 | 3820.4 | 3982.6 | 4098.1 | 4274.7 | 4362.7 | 4243.9 |
| 65°   | 3301.8 | 3344.4 | 3462.6 | 3636.0 | 3888.0 | 4191.3 | 4521.6 | 4838.8 | 5203.8 | 5390.8 | 5149.2 |
| 67.5° | 2884.2 | 2920.3 | 3047.7 | 3249.2 | 3563.8 | 3981.9 | 4495.4 | 5151.9 | 5905.0 | 6255.5 | 5828.2 |
| 68°   | 2724.6 | 2792.2 | 2919.0 | 3119.2 | 3436.3 | 3847.3 | 4395.5 | 5104.6 | 5926.6 | 6305.5 | 5843.9 |
| 70°   | 2089.1 | 2113.4 | 2234.8 | 2414.8 | 2756.9 | 3159.9 | 3713.4 | 4521.6 | 5450.6 | 5840.6 | 5365.9 |
| 72.5° | 992.7  | 1007.1 | 1086.0 | 1263.1 | 1480.5 | 1808.8 | 2297.2 | 3059.4 | 3896.6 | 4302.3 | 3828.9 |
| 75°   | 363.8  | 367.0  | 385.3  | 427.4  | 508.8  | 632.3  | 866.6  | 1340.7 | 1984.7 | 2366.8 | 1992.6 |
| 77.5° | 196.3  | 196.9  | 204.2  | 214.7  | 229.1  | 245.5  | 281.0  | 376.9  | 607.9  | 827.3  | 642.1  |
| 80°   | 123.5  | 122.8  | 130.0  | 138.5  | 148.3  | 156.3  | 159.6  | 170.7  | 192.4  | 225.2  | 206.8  |
| 82.5° | 63.0   | 68.9   | 85.3   | 94.5   | 108.9  | 111.6  | 108.3  | 107.7  | 114.3  | 123.5  | 127.4  |
| 85°   | 34.8   | 30.9   | 45.3   | 60.4   | 65.7   | 67.6   | 68.2   | 64.3   | 63.0   | 61.7   | 65.0   |
| 87.5° | 17.7   | 16.4   | 19.7   | 30.2   | 32.1   | 26.3   | 26.9   | 23.0   | 15.8   | 15.8   | 16.4   |
| 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):**

|       | 55°    | 60°    | 65°    | 70°    | 75°    | 80°    | 85°    | 90°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1069.5 | 1069.5 | 1069.5 | 1069.5 | 1069.5 | 1069.5 | 1069.5 | 1069.5 |
| 2.5°  | 1061.6 | 1062.3 | 1061.0 | 1061.0 | 1061.0 | 1061.6 | 1061.0 | 1060.3 |
| 5°    | 1053.1 | 1054.4 | 1054.4 | 1055.1 | 1055.7 | 1055.7 | 1055.7 | 1055.7 |
| 7.5°  | 1040.6 | 1041.3 | 1042.6 | 1042.6 | 1042.6 | 1042.6 | 1042.6 | 1042.6 |
| 10°   | 1028.8 | 1027.5 | 1026.8 | 1025.5 | 1025.5 | 1023.6 | 1024.2 | 1024.9 |
| 12.5° | 1022.8 | 1020.3 | 1019.0 | 1017.0 | 1015.7 | 1013.7 | 1013.7 | 1014.4 |
| 15°   | 1025.5 | 1021.6 | 1017.6 | 1016.3 | 1015.0 | 1013.7 | 1012.4 | 1013.0 |
| 17.5° | 1030.7 | 1026.2 | 1021.6 | 1019.0 | 1016.3 | 1014.4 | 1013.7 | 1014.4 |
| 20°   | 1042.0 | 1035.3 | 1028.2 | 1023.6 | 1018.2 | 1017.0 | 1015.0 | 1017.0 |
| 22.5° | 1057.0 | 1049.1 | 1039.9 | 1031.4 | 1025.5 | 1022.8 | 1020.3 | 1022.2 |
| 25°   | 1075.4 | 1066.8 | 1057.7 | 1047.8 | 1041.3 | 1039.3 | 1036.0 | 1036.0 |
| 27.5° | 1101.0 | 1093.8 | 1086.0 | 1076.8 | 1070.2 | 1068.2 | 1062.9 | 1062.9 |
| 30°   | 1141.7 | 1134.6 | 1127.3 | 1119.4 | 1112.9 | 1110.8 | 1104.3 | 1104.3 |
| 32.5° | 1195.5 | 1187.6 | 1183.0 | 1176.5 | 1171.3 | 1168.0 | 1160.1 | 1159.4 |
| 35°   | 1267.7 | 1260.6 | 1259.9 | 1255.3 | 1250.0 | 1250.8 | 1242.8 | 1241.6 |
| 37.5° | 1371.5 | 1365.6 | 1367.6 | 1363.6 | 1359.0 | 1363.0 | 1358.4 | 1358.4 |
| 40°   | 1504.1 | 1502.2 | 1504.1 | 1501.5 | 1502.2 | 1502.8 | 1498.9 | 1500.2 |
| 42.5° | 1664.3 | 1659.1 | 1670.9 | 1669.6 | 1667.6 | 1672.8 | 1663.7 | 1657.1 |
| 45°   | 1848.8 | 1846.8 | 1858.7 | 1860.6 | 1856.7 | 1860.0 | 1843.6 | 1842.9 |
| 47.5° | 2049.1 | 2049.1 | 2059.6 | 2058.3 | 2054.3 | 2055.0 | 2035.3 | 2022.8 |
| 50°   | 2257.9 | 2256.5 | 2267.1 | 2264.4 | 2259.2 | 2258.5 | 2238.1 | 2225.6 |
| 52.5° | 2475.1 | 2475.1 | 2490.3 | 2483.0 | 2470.5 | 2464.7 | 2439.7 | 2423.3 |
| 55°   | 2715.4 | 2712.1 | 2716.8 | 2693.1 | 2668.9 | 2651.1 | 2620.3 | 2607.8 |
| 57.5° | 3019.4 | 2981.4 | 2948.6 | 2918.4 | 2884.2 | 2863.1 | 2827.0 | 2813.9 |
| 60°   | 3450.8 | 3349.0 | 3305.1 | 3244.6 | 3188.1 | 3159.9 | 3112.0 | 3086.4 |
| 62.5° | 4048.2 | 3879.5 | 3760.1 | 3626.8 | 3498.1 | 3407.4 | 3334.6 | 3302.4 |
| 65°   | 4738.9 | 4371.3 | 4067.3 | 3781.6 | 3539.4 | 3347.1 | 3240.0 | 3206.5 |
| 67.5° | 5001.5 | 4326.6 | 3802.0 | 3392.3 | 3098.2 | 2869.1 | 2741.1 | 2714.1 |
| 68°   | 4945.8 | 4224.2 | 3679.2 | 3259.7 | 2964.3 | 2733.2 | 2605.8 | 2581.5 |
| 70°   | 4362.7 | 3563.8 | 2988.6 | 2571.0 | 2295.3 | 2075.4 | 1985.3 | 1946.7 |
| 72.5° | 2974.1 | 2288.8 | 1755.6 | 1404.3 | 1198.2 | 1059.0 | 976.3  | 948.1  |
| 75°   | 1368.9 | 925.1  | 617.8  | 461.6  | 392.0  | 358.4  | 332.9  | 326.3  |
| 77.5° | 399.2  | 290.2  | 249.5  | 231.1  | 217.3  | 205.5  | 196.9  | 196.3  |
| 80°   | 189.8  | 177.9  | 172.7  | 160.8  | 148.3  | 137.2  | 129.3  | 130.6  |
| 82.5° | 127.4  | 124.1  | 124.1  | 112.2  | 92.6   | 79.5   | 65.7   | 59.1   |
| 85°   | 67.6   | 70.3   | 74.2   | 70.3   | 61.1   | 45.3   | 29.6   | 32.1   |
| 87.5° | 23.0   | 26.3   | 27.6   | 26.9   | 24.2   | 18.4   | 13.8   | 13.8   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

(END OF REPORT)