

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: P197344

Luminaire Tested: **NAV-AF-04-D-UNV-T4W-8030**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P197344  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24127)  
Test Lab: INNOVATION CENTER P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: LUMARK  
Catalog Number: NAV-AF-04-D-UNV-T4W-8030  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(4) 80 CRI, 3000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV WIDE OPTICS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 19673 lumens  
Efficiency: N/A  
Efficacy: 87.4 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type IV - Short - Semi-Cutoff  
BUG Rating: B3 - U0 - G4

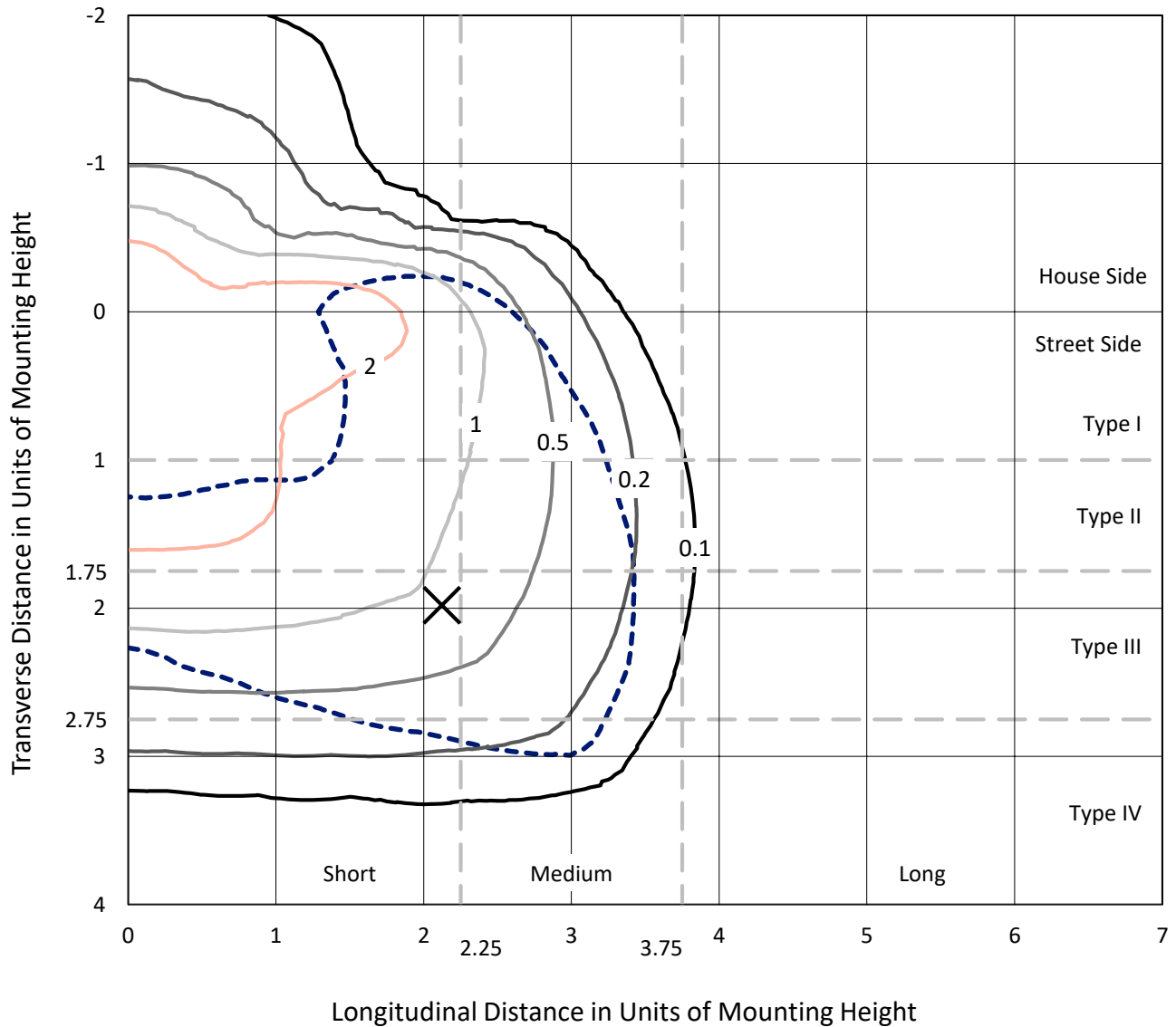
Input Watts (W): 225  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

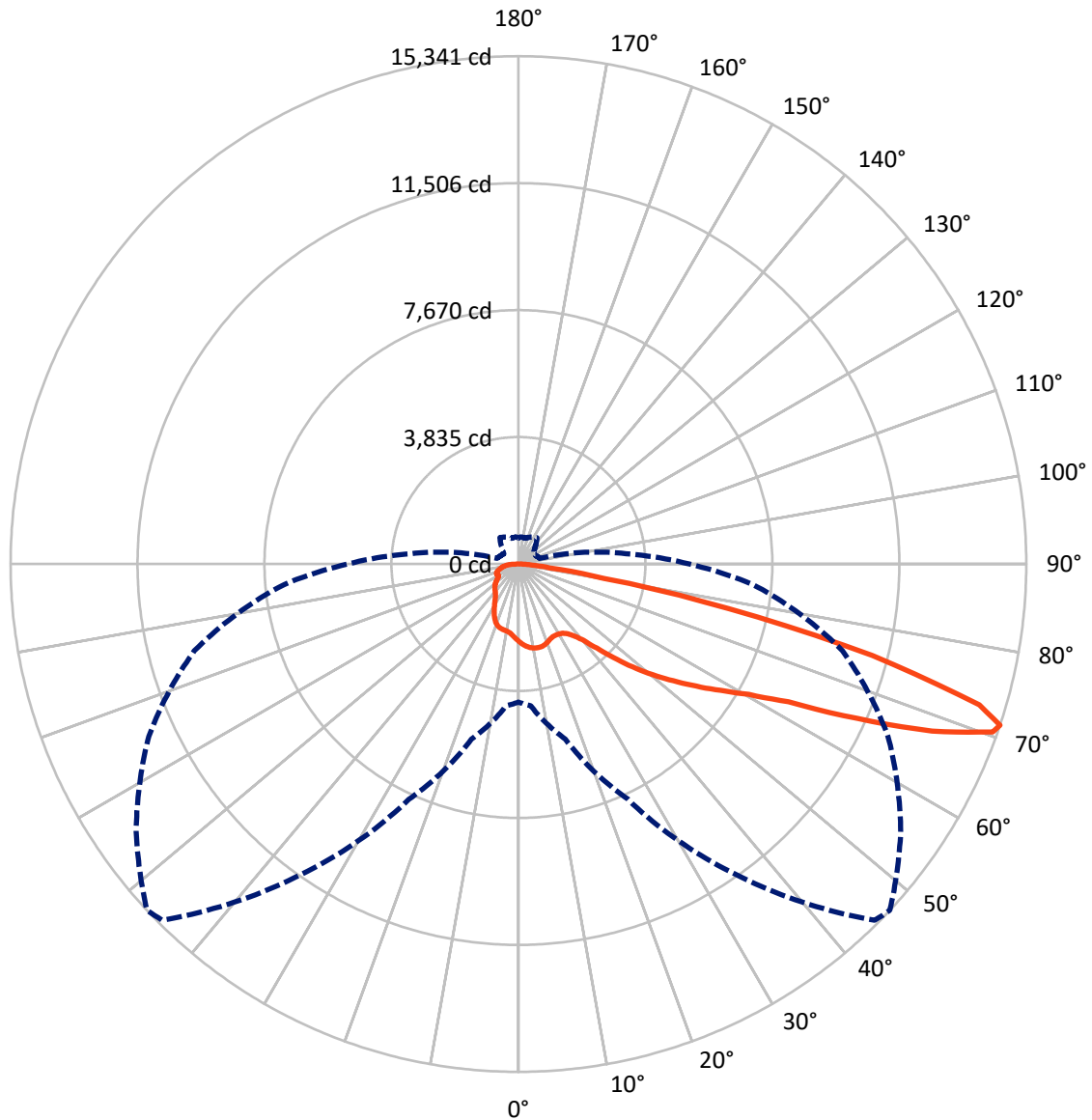
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 4.3 fc  
 Type IV - Short - Semi-Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 47-Deg Lateral      - - - Horizontal Cone Through 71-Deg Vertical

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**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 4216.2   | 0.0    | 4216.2  |
|                    | % Fixture | 21.4     | 0.0    | 21.4    |
| <b>Street Side</b> | Lumens    | 15456.8  | 0.0    | 15456.8 |
|                    | % Fixture | 78.6     | 0.0    | 78.6    |
| <b>Total</b>       | Lumens    | 19673.0  | 0.0    | 19673.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 223.4   | 1.1       |
| 10°-20°   | 653.5   | 3.3       |
| 20°-30°   | 971.0   | 4.9       |
| 30°-40°   | 1394.3  | 7.1       |
| 40°-50°   | 2472.1  | 12.6      |
| 50°-60°   | 4230.1  | 21.5      |
| 60°-70°   | 6005.3  | 30.5      |
| 70°-80°   | 3289.1  | 16.7      |
| 80°-90°   | 434.2   | 2.2       |
| 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°    | 19673.0 | 100.0     |
| 0°-180°   | 19673.0 | 100.0     |



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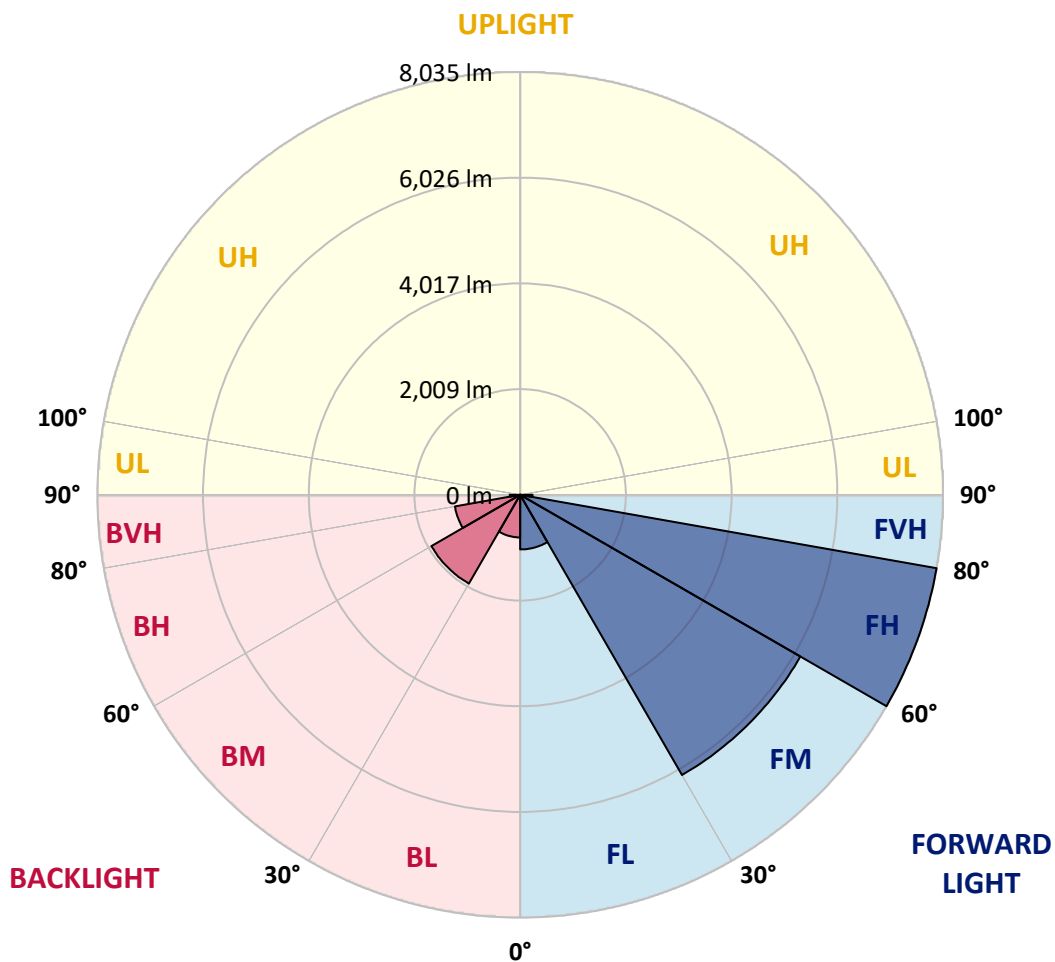
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |          |
|------|-------------|--------|-----------|-------------------------|------|----------|
|      |             |        |           | B                       | U    | G        |
| FL   | (0°-30°)    | 1038.3 | 5.3       |                         |      |          |
| FM   | (30°-60°)   | 6148.4 | 31.3      |                         |      |          |
| FH   | (60°-80°)   | 8034.6 | 40.8      |                         |      | G4/12000 |
| FVH  | (80°-90°)   | 235.5  | 1.2       |                         |      | G3/500   |
| BL   | (0°-30°)    | 809.7  | 4.1       | B2/1000                 |      |          |
| BM   | (30°-60°)   | 1948.1 | 9.9       | B2/2500                 |      |          |
| BH   | (60°-80°)   | 1259.7 | 6.4       | B3/2500                 |      | G3/2500  |
| BVH  | (80°-90°)   | 198.7  | 1.0       |                         |      | G2/225   |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |          |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |          |

**BUG Rating: B3-U0-G4**

Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°     | 35°     | 45°     | 47°     | 55°     | 65°     | 75°     | 85°     |
|-------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0°    | 2339.4 | 2339.4 | 2339.4 | 2339.4  | 2339.4  | 2339.4  | 2339.4  | 2339.4  | 2339.4  | 2339.4  | 2339.4  |
| 2.5°  | 2482.2 | 2477.1 | 2479.7 | 2470.8  | 2449.1  | 2426.1  | 2426.1  | 2401.9  | 2376.4  | 2350.9  | 2322.9  |
| 5°    | 2636.5 | 2628.9 | 2622.5 | 2594.4  | 2552.4  | 2505.2  | 2497.5  | 2449.1  | 2396.8  | 2344.5  | 2293.6  |
| 7.5°  | 2765.3 | 2757.6 | 2738.5 | 2687.5  | 2626.3  | 2556.2  | 2547.3  | 2483.5  | 2414.7  | 2342.0  | 2270.6  |
| 10°   | 2857.1 | 2852.0 | 2815.0 | 2750.0  | 2678.6  | 2595.7  | 2580.4  | 2515.4  | 2433.8  | 2343.3  | 2252.8  |
| 12.5° | 2908.1 | 2900.4 | 2855.8 | 2779.3  | 2695.1  | 2611.0  | 2595.7  | 2533.2  | 2440.2  | 2340.7  | 2234.9  |
| 15°   | 2887.7 | 2883.8 | 2841.8 | 2764.0  | 2679.8  | 2607.2  | 2594.4  | 2530.7  | 2436.3  | 2331.8  | 2218.3  |
| 17.5° | 2801.0 | 2809.9 | 2776.7 | 2700.2  | 2631.4  | 2580.4  | 2566.4  | 2506.5  | 2417.2  | 2310.1  | 2192.8  |
| 20°   | 2681.1 | 2691.3 | 2674.7 | 2597.0  | 2557.5  | 2524.3  | 2516.7  | 2468.2  | 2385.3  | 2278.3  | 2162.2  |
| 22.5° | 2553.6 | 2562.6 | 2563.8 | 2491.2  | 2478.4  | 2465.7  | 2459.3  | 2424.9  | 2357.3  | 2259.1  | 2141.8  |
| 25°   | 2465.7 | 2475.9 | 2478.4 | 2414.7  | 2422.3  | 2426.1  | 2424.9  | 2400.6  | 2352.2  | 2259.1  | 2144.4  |
| 27.5° | 2442.7 | 2447.8 | 2445.3 | 2386.6  | 2400.6  | 2422.3  | 2423.6  | 2418.5  | 2372.6  | 2284.6  | 2180.1  |
| 30°   | 2521.8 | 2524.3 | 2492.4 | 2404.5  | 2418.5  | 2446.5  | 2447.8  | 2445.3  | 2415.9  | 2350.9  | 2260.4  |
| 32.5° | 2863.4 | 2860.9 | 2751.2 | 2524.3  | 2475.9  | 2486.1  | 2489.9  | 2512.8  | 2515.4  | 2460.6  | 2376.4  |
| 35°   | 3383.6 | 3382.3 | 3254.8 | 2867.3  | 2639.1  | 2585.5  | 2590.6  | 2626.3  | 2658.2  | 2621.2  | 2572.8  |
| 37.5° | 3956.0 | 3959.9 | 3882.1 | 3356.8  | 2990.9  | 2767.8  | 2762.7  | 2789.5  | 2846.9  | 2859.6  | 2866.0  |
| 40°   | 4590.9 | 4610.1 | 4606.2 | 3919.1  | 3484.3  | 3078.9  | 3027.9  | 2997.3  | 3108.2  | 3178.3  | 3268.9  |
| 42.5° | 5316.4 | 5311.3 | 5313.8 | 4536.1  | 4047.8  | 3568.5  | 3474.1  | 3331.3  | 3460.1  | 3581.2  | 3780.1  |
| 45°   | 5939.8 | 5960.2 | 5975.5 | 5192.7  | 4678.9  | 4128.1  | 4032.5  | 3772.4  | 3888.5  | 4069.5  | 4372.9  |
| 47.5° | 6567.0 | 6531.3 | 6559.4 | 5923.2  | 5381.4  | 4766.9  | 4643.2  | 4292.6  | 4401.0  | 4656.0  | 5117.5  |
| 50°   | 7297.6 | 7281.0 | 7153.5 | 6876.8  | 6230.5  | 5414.5  | 5252.6  | 4835.7  | 4993.8  | 5334.2  | 6036.7  |
| 52.5° | 7952.9 | 7863.6 | 7764.2 | 7626.5  | 7065.5  | 6069.8  | 5864.6  | 5400.5  | 5691.2  | 6113.2  | 7177.7  |
| 55°   | 8192.5 | 8132.6 | 8252.5 | 8430.9  | 7949.0  | 6737.9  | 6508.4  | 6059.6  | 6477.8  | 7004.3  | 8520.2  |
| 57.5° | 8447.5 | 8467.9 | 8738.2 | 9099.0  | 8785.4  | 7450.5  | 7201.9  | 6839.9  | 7340.9  | 8001.3  | 10020.7 |
| 60°   | 8575.0 | 8656.6 | 9195.9 | 9872.9  | 9580.9  | 8232.1  | 7993.6  | 7736.1  | 8298.4  | 9102.8  | 11517.5 |
| 62.5° | 8596.7 | 8706.3 | 9470.0 | 10144.4 | 10676.0 | 9429.2  | 9153.8  | 8874.6  | 9494.2  | 10320.3 | 12601.2 |
| 65°   | 8198.9 | 8367.2 | 9445.8 | 10478.4 | 11674.3 | 11429.5 | 11254.9 | 10767.8 | 11095.5 | 11392.5 | 12786.0 |
| 67.5° | 7029.8 | 7213.4 | 8511.3 | 10340.7 | 12474.9 | 13505.1 | 13471.9 | 12752.9 | 12332.1 | 11806.9 | 11415.5 |
| 70°   | 5159.5 | 5307.4 | 6554.3 | 8840.2  | 12125.6 | 15134.4 | 15193.0 | 14039.2 | 12677.6 | 10927.2 | 8488.3  |
| 71°   | 4172.8 | 4300.3 | 5475.7 | 7848.3  | 11444.8 | 15218.5 | 15340.9 | 14096.6 | 12318.1 | 10132.9 | 7106.3  |
| 72.5° | 2597.0 | 2668.4 | 3636.0 | 5923.2  | 9855.0  | 14351.6 | 14558.1 | 13362.3 | 11186.0 | 8564.8  | 5023.1  |
| 75°   | 980.4  | 1008.4 | 1348.8 | 2612.3  | 5882.4  | 10781.9 | 11031.7 | 10098.5 | 7858.5  | 4889.3  | 2102.3  |
| 77.5° | 526.5  | 540.6  | 669.3  | 1086.2  | 2357.3  | 6180.7  | 6502.0  | 5760.0  | 3769.9  | 1710.9  | 859.3   |
| 80°   | 353.1  | 362.1  | 462.8  | 643.8   | 1083.7  | 2353.5  | 2621.2  | 2312.7  | 1411.3  | 976.6   | 612.0   |
| 82.5° | 228.2  | 233.3  | 314.9  | 423.3   | 699.9   | 827.4   | 944.7   | 986.8   | 881.0   | 699.9   | 369.7   |
| 85°   | 150.4  | 154.3  | 207.8  | 270.3   | 433.5   | 408.0   | 418.2   | 546.9   | 600.5   | 461.5   | 188.7   |
| 87.5° | 86.7   | 89.2   | 124.9  | 139.0   | 195.1   | 153.0   | 165.7   | 260.1   | 357.0   | 300.9   | 108.4   |
| 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):**

|       | 90°     | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 2339.4  | 2339.4 | 2339.4 | 2339.4 | 2339.4 | 2339.4 | 2339.4 | 2339.4 | 2339.4 | 2339.4 | 2339.4 |
| 2.5°  | 2310.1  | 2299.9 | 2277.0 | 2263.0 | 2256.6 | 2254.0 | 2251.5 | 2256.6 | 2256.6 | 2254.0 | 2248.9 |
| 5°    | 2268.1  | 2248.9 | 2210.7 | 2183.9 | 2169.9 | 2166.1 | 2171.2 | 2177.5 | 2181.4 | 2181.4 | 2177.5 |
| 7.5°  | 2237.5  | 2209.4 | 2158.4 | 2121.4 | 2099.8 | 2093.4 | 2107.4 | 2130.4 | 2145.7 | 2153.3 | 2154.6 |
| 10°   | 2212.0  | 2173.7 | 2117.6 | 2079.4 | 2061.5 | 2059.0 | 2076.8 | 2106.1 | 2138.0 | 2152.0 | 2154.6 |
| 12.5° | 2189.0  | 2145.7 | 2084.5 | 2048.8 | 2036.0 | 2042.4 | 2066.6 | 2093.4 | 2130.4 | 2150.8 | 2152.0 |
| 15°   | 2167.3  | 2122.7 | 2057.7 | 2020.7 | 2018.2 | 2028.4 | 2051.3 | 2073.0 | 2101.0 | 2126.5 | 2126.5 |
| 17.5° | 2141.8  | 2093.4 | 2025.8 | 1991.4 | 1991.4 | 2000.3 | 2015.6 | 2027.1 | 2044.9 | 2069.2 | 2067.9 |
| 20°   | 2111.2  | 2061.5 | 1992.7 | 1957.0 | 1949.3 | 1944.2 | 1944.2 | 1946.8 | 1962.1 | 1983.8 | 1987.6 |
| 22.5° | 2088.3  | 2037.3 | 1964.6 | 1921.3 | 1886.9 | 1853.7 | 1839.7 | 1834.6 | 1848.6 | 1869.0 | 1874.1 |
| 25°   | 2088.3  | 2037.3 | 1955.7 | 1883.0 | 1798.9 | 1735.1 | 1708.4 | 1700.7 | 1714.7 | 1733.9 | 1741.5 |
| 27.5° | 2122.7  | 2071.7 | 1976.1 | 1848.6 | 1694.3 | 1592.4 | 1560.5 | 1554.1 | 1566.9 | 1582.2 | 1589.8 |
| 30°   | 2203.0  | 2153.3 | 2034.7 | 1809.1 | 1578.3 | 1444.5 | 1408.8 | 1402.4 | 1408.8 | 1415.1 | 1424.1 |
| 32.5° | 2336.9  | 2294.8 | 2130.4 | 1773.4 | 1461.0 | 1310.6 | 1267.3 | 1257.1 | 1259.6 | 1260.9 | 1268.5 |
| 35°   | 2554.9  | 2535.8 | 2257.9 | 1731.3 | 1350.1 | 1201.0 | 1156.3 | 1135.9 | 1134.7 | 1141.0 | 1150.0 |
| 37.5° | 2888.9  | 2900.4 | 2422.3 | 1670.1 | 1258.3 | 1123.2 | 1078.6 | 1058.2 | 1048.0 | 1060.7 | 1070.9 |
| 40°   | 3360.6  | 3387.4 | 2612.3 | 1587.3 | 1183.1 | 1077.3 | 1030.1 | 1011.0 | 997.0  | 993.2  | 998.2  |
| 42.5° | 3973.9  | 3966.2 | 2806.1 | 1481.4 | 1101.5 | 1046.7 | 997.0  | 976.6  | 953.6  | 924.3  | 917.9  |
| 45°   | 4700.6  | 4590.9 | 2968.0 | 1351.4 | 1008.4 | 1017.4 | 966.4  | 938.3  | 902.6  | 859.3  | 854.2  |
| 47.5° | 5558.6  | 5256.4 | 3067.4 | 1212.4 | 921.8  | 979.1  | 932.0  | 888.6  | 836.3  | 808.3  | 804.5  |
| 50°   | 6592.5  | 6035.4 | 3137.5 | 1070.9 | 844.0  | 930.7  | 883.5  | 826.1  | 775.1  | 767.5  | 766.2  |
| 52.5° | 7816.4  | 6954.6 | 3224.2 | 943.4  | 782.8  | 868.2  | 835.1  | 776.4  | 735.6  | 739.4  | 739.4  |
| 55°   | 9118.1  | 7905.7 | 3226.8 | 842.7  | 729.2  | 795.5  | 799.4  | 752.2  | 720.3  | 733.1  | 736.9  |
| 57.5° | 10305.1 | 8736.9 | 2973.1 | 771.3  | 678.2  | 738.2  | 787.9  | 761.1  | 736.9  | 781.5  | 785.3  |
| 60°   | 11340.3 | 9376.9 | 2427.4 | 712.7  | 636.2  | 716.5  | 813.4  | 815.9  | 810.8  | 932.0  | 940.9  |
| 62.5° | 11718.9 | 9383.3 | 1723.7 | 663.0  | 613.2  | 729.2  | 866.9  | 870.8  | 870.8  | 983.0  | 999.5  |
| 65°   | 11188.6 | 8601.8 | 1147.4 | 633.6  | 597.9  | 757.3  | 910.3  | 893.7  | 854.2  | 932.0  | 914.1  |
| 67.5° | 9319.5  | 6695.8 | 838.9  | 614.5  | 576.3  | 758.6  | 948.5  | 906.5  | 838.9  | 905.2  | 874.6  |
| 70°   | 6405.1  | 4260.7 | 702.5  | 596.7  | 550.8  | 725.4  | 968.9  | 902.6  | 815.9  | 844.0  | 803.2  |
| 71°   | 5155.7  | 3400.2 | 666.8  | 590.3  | 540.6  | 706.3  | 971.5  | 897.5  | 804.5  | 822.3  | 785.3  |
| 72.5° | 3396.3  | 2094.7 | 623.4  | 576.3  | 525.3  | 673.1  | 965.1  | 886.1  | 789.2  | 790.4  | 766.2  |
| 75°   | 1339.9  | 868.2  | 561.0  | 544.4  | 481.9  | 619.6  | 937.1  | 861.8  | 759.8  | 734.3  | 724.1  |
| 77.5° | 677.0   | 567.3  | 493.4  | 499.8  | 430.9  | 564.8  | 897.5  | 822.3  | 719.0  | 684.6  | 677.0  |
| 80°   | 494.7   | 430.9  | 422.0  | 433.5  | 373.5  | 511.2  | 847.8  | 768.8  | 666.8  | 702.5  | 687.2  |
| 82.5° | 300.9   | 262.6  | 330.2  | 358.2  | 312.4  | 456.4  | 789.2  | 706.3  | 600.5  | 553.3  | 535.5  |
| 85°   | 142.8   | 154.3  | 238.4  | 263.9  | 230.8  | 364.6  | 721.6  | 637.5  | 524.0  | 452.6  | 460.2  |
| 87.5° | 70.1    | 85.4   | 136.4  | 158.1  | 151.7  | 267.7  | 544.4  | 494.7  | 413.1  | 340.4  | 332.7  |
| 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)