

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: STREETWORKS

Report Number: P196349

Luminaire Tested: **NVN-AF-05-LED-U-T4FT-600**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196349  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24256)  
Test Lab: INNOVATION CENTER P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: STREETWORKS  
Catalog Number: NVN-AF-05-LED-U-T4FT-600  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(5) 70 CRI, 4000K, 615mA 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: 20426.3 lumens  
Efficiency: N/A  
Efficacy: 126.1 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')  
IES Classification: Type IV - Short - Non-Cutoff  
BUG Rating: B3 - U0 - G4

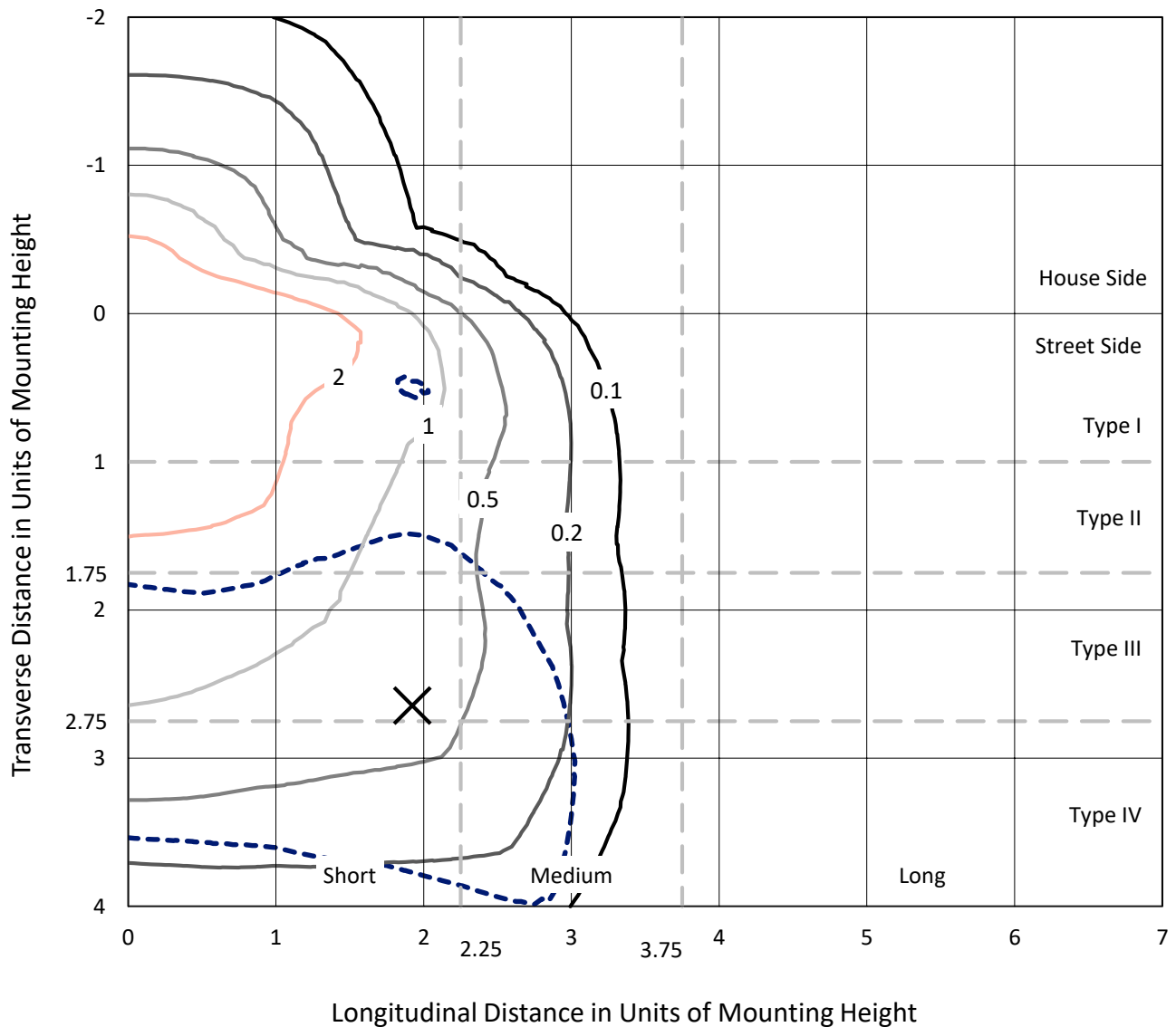
Input Watts (W): 162  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

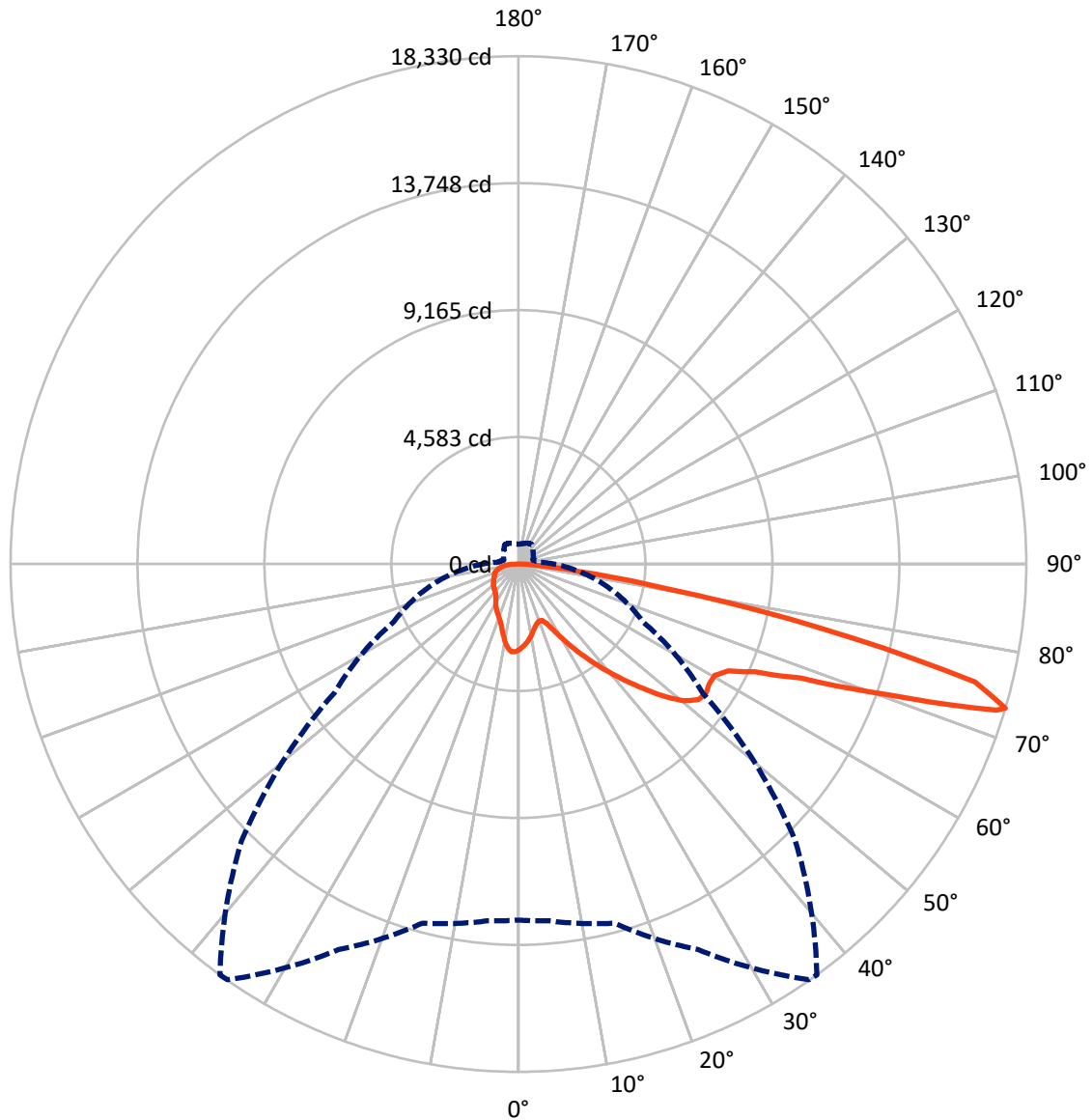
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 5 fc  
 Type IV - Short - Non-Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 36-Deg Lateral      - - - Horizontal Cone Through 73-Deg Vertical

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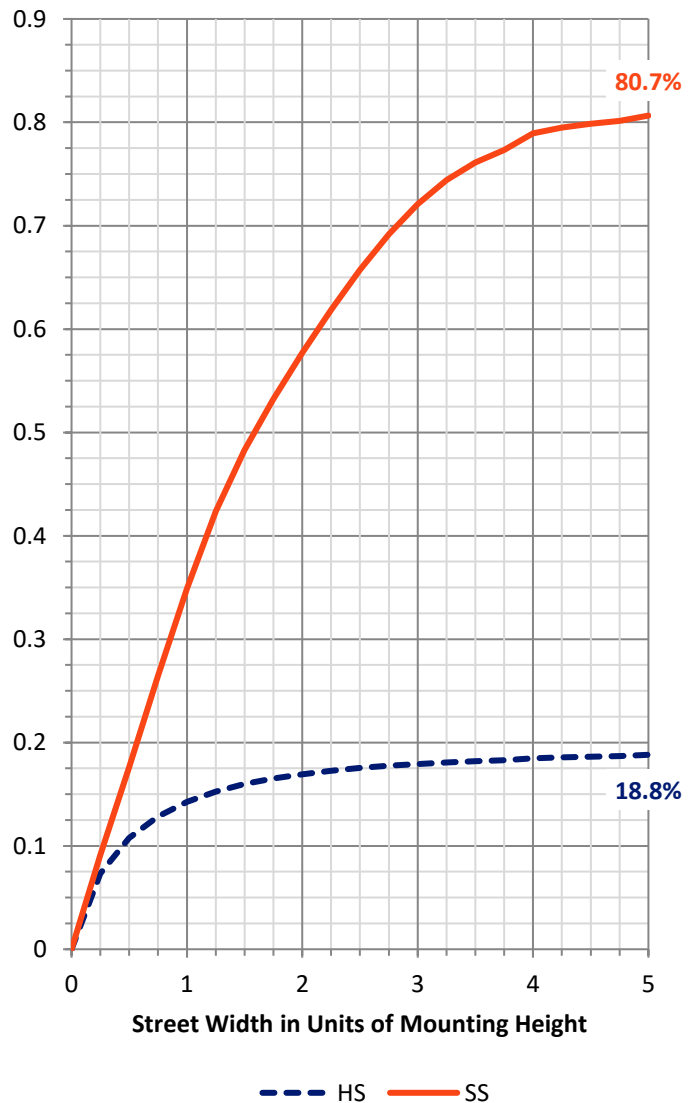
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 3938.8   | 0.0    | 3938.8  |
|                    | % Fixture | 19.3     | 0.0    | 19.3    |
| <b>Street Side</b> | Lumens    | 16487.5  | 0.0    | 16487.5 |
|                    | % Fixture | 80.7     | 0.0    | 80.7    |
| <b>Total</b>       | Lumens    | 20426.3  | 0.0    | 20426.3 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 281.0   | 1.4       |
| 10°-20°   | 705.8   | 3.5       |
| 20°-30°   | 1131.6  | 5.5       |
| 30°-40°   | 1871.7  | 9.2       |
| 40°-50°   | 2896.3  | 14.2      |
| 50°-60°   | 3877.3  | 19.0      |
| 60°-70°   | 5064.9  | 24.8      |
| 70°-80°   | 4137.2  | 20.3      |
| 80°-90°   | 460.5   | 2.3       |
| 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°    | 20426.3 | 100.0     |
| 0°-180°   | 20426.3 | 100.0     |

**Coefficient of Utilization**



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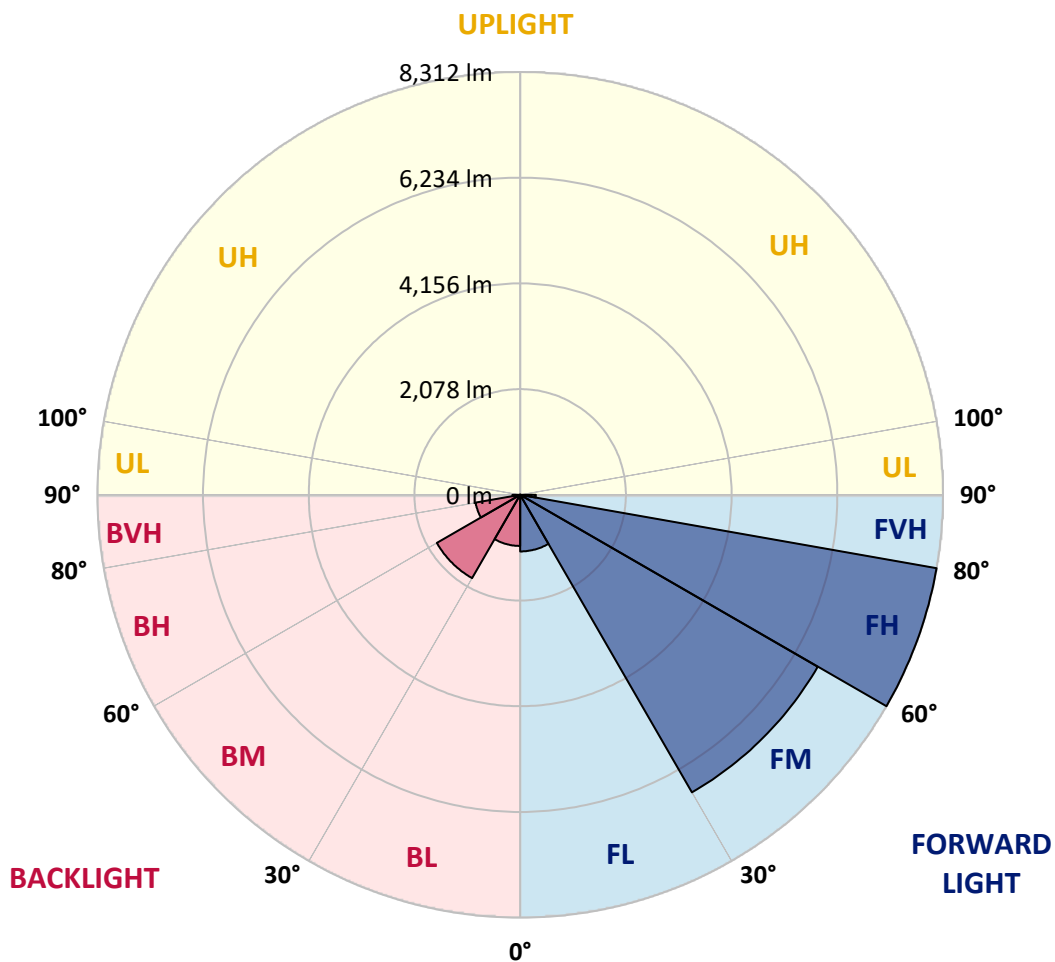
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |          |
|------|-------------|--------|-----------|-------------------------|------|----------|
|      |             |        |           | B                       | U    | G        |
| FL   | (0°-30°)    | 1113.0 | 5.4       |                         |      |          |
| FM   | (30°-60°)   | 6753.6 | 33.1      |                         |      |          |
| FH   | (60°-80°)   | 8312.0 | 40.7      |                         |      | G4/12000 |
| FVH  | (80°-90°)   | 308.8  | 1.5       |                         |      | G3/500   |
| BL   | (0°-30°)    | 1005.4 | 4.9       | B3/2500                 |      |          |
| BM   | (30°-60°)   | 1891.6 | 9.3       | B2/2500                 |      |          |
| BH   | (60°-80°)   | 890.1  | 4.4       | B2/1000                 |      | G2/1000  |
| BVH  | (80°-90°)   | 151.7  | 0.7       |                         |      | 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°     | 36°     | 45°     | 55°    | 65°    | 75°    | 85°    |
|-------|---------|---------|---------|---------|---------|---------|---------|--------|--------|--------|--------|
| 0°    | 3094.0  | 3094.0  | 3094.0  | 3094.0  | 3094.0  | 3094.0  | 3094.0  | 3094.0 | 3094.0 | 3094.0 | 3094.0 |
| 2.5°  | 2975.9  | 2983.6  | 2985.0  | 2994.1  | 2994.1  | 2992.7  | 2996.6  | 3012.2 | 3020.1 | 3038.2 | 3053.7 |
| 5°    | 2829.3  | 2838.3  | 2842.2  | 2857.8  | 2877.3  | 2878.6  | 2892.8  | 2922.7 | 2951.2 | 2991.4 | 3025.2 |
| 7.5°  | 2664.4  | 2674.8  | 2685.1  | 2717.6  | 2746.2  | 2748.8  | 2776.0  | 2824.1 | 2861.7 | 2911.0 | 2972.0 |
| 10°   | 2504.8  | 2507.4  | 2517.8  | 2559.3  | 2597.0  | 2600.9  | 2639.7  | 2694.2 | 2744.9 | 2813.6 | 2882.5 |
| 12.5° | 2373.7  | 2381.5  | 2378.9  | 2410.1  | 2442.5  | 2445.1  | 2497.0  | 2565.8 | 2639.7 | 2717.6 | 2799.4 |
| 15°   | 2328.2  | 2327.0  | 2299.7  | 2298.5  | 2312.7  | 2315.3  | 2365.9  | 2446.4 | 2529.5 | 2625.5 | 2730.6 |
| 17.5° | 2359.4  | 2349.0  | 2277.7  | 2233.5  | 2224.4  | 2227.1  | 2264.7  | 2352.9 | 2441.2 | 2551.5 | 2677.4 |
| 20°   | 2530.8  | 2490.5  | 2323.1  | 2216.6  | 2186.9  | 2186.9  | 2208.9  | 2280.3 | 2377.6 | 2506.1 | 2664.4 |
| 22.5° | 2937.0  | 2874.7  | 2517.8  | 2328.2  | 2223.2  | 2212.7  | 2195.9  | 2250.4 | 2358.1 | 2512.6 | 2717.6 |
| 25°   | 3448.3  | 3418.4  | 2874.7  | 2625.5  | 2408.7  | 2375.0  | 2263.4  | 2282.8 | 2398.4 | 2582.6 | 2862.9 |
| 27.5° | 3922.0  | 3870.1  | 3343.2  | 3057.6  | 2751.3  | 2699.5  | 2463.3  | 2384.1 | 2494.4 | 2712.5 | 3073.3 |
| 30°   | 4198.4  | 4163.4  | 3824.6  | 3552.1  | 3187.4  | 3121.2  | 2782.5  | 2584.0 | 2665.7 | 2926.6 | 3371.7 |
| 32.5° | 4499.6  | 4478.8  | 4307.4  | 4059.6  | 3659.8  | 3583.3  | 3195.2  | 2909.7 | 2927.9 | 3210.8 | 3731.2 |
| 35°   | 4791.5  | 4818.8  | 4721.4  | 4539.8  | 4168.6  | 4097.2  | 3749.4  | 3335.3 | 3251.0 | 3530.1 | 4115.3 |
| 37.5° | 5142.0  | 5148.4  | 5087.4  | 4969.3  | 4703.3  | 4644.9  | 4358.1  | 3789.6 | 3602.7 | 3870.1 | 4486.6 |
| 40°   | 5841.5  | 5739.0  | 5500.1  | 5406.7  | 5248.4  | 5212.0  | 4885.0  | 4206.2 | 3929.8 | 4219.2 | 4836.9 |
| 42.5° | 6598.1  | 6438.5  | 6064.7  | 5911.5  | 5847.9  | 5814.2  | 5323.6  | 4483.9 | 4236.0 | 4568.3 | 5180.8 |
| 45°   | 7208.0  | 7078.3  | 6712.3  | 6522.8  | 6530.6  | 6476.1  | 5706.5  | 4731.9 | 4568.3 | 4918.8 | 5565.1 |
| 47.5° | 7808.9  | 7592.2  | 7182.1  | 7154.8  | 7245.7  | 7165.3  | 6072.4  | 4979.7 | 4914.9 | 5300.3 | 5949.2 |
| 50°   | 7847.9  | 7650.6  | 7484.5  | 7702.5  | 7858.3  | 7758.4  | 6404.7  | 5304.2 | 5274.3 | 5762.3 | 6444.9 |
| 52.5° | 7374.1  | 7345.6  | 7598.7  | 7966.0  | 8224.2  | 8134.7  | 6676.0  | 5637.7 | 5641.6 | 6339.8 | 7048.4 |
| 55°   | 7201.6  | 7165.3  | 7468.9  | 7920.6  | 8269.6  | 8216.4  | 6878.4  | 6014.0 | 6049.1 | 7040.7 | 7696.1 |
| 57.5° | 7492.3  | 7401.5  | 7461.1  | 7834.9  | 8163.2  | 8132.0  | 7088.6  | 6432.0 | 6495.5 | 7847.9 | 8294.3 |
| 60°   | 8394.2  | 8208.7  | 7892.0  | 7962.1  | 8167.1  | 8148.9  | 7389.8  | 6897.9 | 7004.3 | 8688.8 | 8673.3 |
| 62.5° | 9745.2  | 9535.0  | 8890.1  | 8578.6  | 8533.1  | 8498.1  | 7886.8  | 7470.2 | 7523.4 | 9296.3 | 8452.6 |
| 65°   | 11227.4 | 11001.5 | 10234.5 | 9724.5  | 9457.2  | 9381.9  | 8688.8  | 8160.7 | 7827.1 | 9294.9 | 7593.5 |
| 67.5° | 12891.2 | 12652.4 | 11888.0 | 11401.3 | 11111.9 | 10983.4 | 9990.5  | 8718.7 | 7728.5 | 8508.5 | 6076.3 |
| 70°   | 14595.3 | 14368.1 | 14017.7 | 14187.7 | 14314.9 | 14118.9 | 12041.2 | 8904.3 | 7019.9 | 6670.8 | 4080.3 |
| 72.5° | 13690.7 | 13672.5 | 13938.5 | 15550.4 | 18002.0 | 18040.9 | 14089.1 | 8380.0 | 5423.6 | 3964.9 | 2175.1 |
| 73°   | 12850.9 | 12927.5 | 13420.7 | 15349.3 | 18317.4 | 18330.4 | 14129.3 | 8108.7 | 4979.7 | 3415.8 | 1910.4 |
| 75°   | 6657.8  | 7176.9  | 9006.9  | 12446.0 | 16961.1 | 17022.1 | 12455.1 | 6138.6 | 2968.1 | 1897.4 | 1287.4 |
| 77.5° | 1783.2  | 1759.9  | 2901.9  | 6063.3  | 11307.8 | 11227.4 | 7870.0  | 2972.0 | 1422.4 | 1190.1 | 903.3  |
| 80°   | 611.3   | 619.1   | 987.7   | 2218.0  | 5278.2  | 5466.3  | 3415.8  | 1296.5 | 935.7  | 829.3  | 639.9  |
| 82.5° | 311.5   | 321.8   | 516.5   | 943.5   | 2207.6  | 2160.9  | 1099.3  | 763.1  | 626.9  | 503.6  | 358.2  |
| 85°   | 166.1   | 171.3   | 284.2   | 489.3   | 809.9   | 818.9   | 386.8   | 407.5  | 398.4  | 285.5  | 176.5  |
| 87.5° | 81.7    | 84.4    | 136.3   | 215.4   | 299.8   | 289.4   | 134.9   | 176.5  | 196.0  | 160.9  | 97.4   |
| 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°    | 3094.0 | 3094.0 | 3094.0 | 3094.0 | 3094.0 | 3094.0 | 3094.0 | 3094.0 | 3094.0 | 3094.0 | 3094.0 |
| 2.5°  | 3073.3 | 3073.3 | 3090.1 | 3118.7 | 3139.4 | 3158.9 | 3171.9 | 3192.6 | 3204.3 | 3203.0 | 3201.7 |
| 5°    | 3052.5 | 3065.5 | 3099.1 | 3134.2 | 3157.5 | 3173.2 | 3173.2 | 3182.2 | 3182.2 | 3178.3 | 3173.2 |
| 7.5°  | 3004.4 | 3026.5 | 3075.8 | 3107.0 | 3113.5 | 3096.6 | 3062.8 | 3036.8 | 3004.4 | 2987.5 | 2981.1 |
| 10°   | 2927.9 | 2956.4 | 3018.7 | 3032.9 | 2999.3 | 2939.6 | 2857.8 | 2787.7 | 2725.4 | 2696.9 | 2687.8 |
| 12.5° | 2852.6 | 2890.2 | 2948.7 | 2926.6 | 2846.2 | 2729.3 | 2603.4 | 2507.4 | 2437.3 | 2410.1 | 2401.0 |
| 15°   | 2790.3 | 2835.7 | 2881.1 | 2812.4 | 2672.2 | 2510.0 | 2371.1 | 2281.6 | 2228.4 | 2207.6 | 2202.4 |
| 17.5° | 2748.8 | 2802.0 | 2817.5 | 2689.0 | 2494.4 | 2312.7 | 2189.4 | 2131.0 | 2107.7 | 2098.6 | 2095.9 |
| 20°   | 2751.3 | 2811.1 | 2773.4 | 2569.7 | 2323.1 | 2140.1 | 2058.4 | 2041.5 | 2041.5 | 2041.5 | 2040.2 |
| 22.5° | 2822.7 | 2874.7 | 2755.2 | 2458.0 | 2158.2 | 1994.8 | 1959.7 | 1974.0 | 1984.3 | 1984.3 | 1983.1 |
| 25°   | 2970.6 | 2999.3 | 2768.2 | 2350.3 | 2003.9 | 1868.8 | 1870.2 | 1897.4 | 1906.5 | 1906.5 | 1903.9 |
| 27.5° | 3196.5 | 3173.2 | 2791.6 | 2231.0 | 1852.0 | 1754.7 | 1772.8 | 1797.4 | 1804.0 | 1800.1 | 1798.8 |
| 30°   | 3479.5 | 3386.0 | 2811.1 | 2090.8 | 1709.2 | 1648.2 | 1663.8 | 1678.0 | 1672.8 | 1663.8 | 1662.5 |
| 32.5° | 3796.1 | 3602.7 | 2799.4 | 1933.8 | 1583.3 | 1537.9 | 1547.0 | 1554.8 | 1547.0 | 1524.9 | 1524.9 |
| 35°   | 4110.2 | 3798.7 | 2735.8 | 1762.4 | 1483.4 | 1431.5 | 1430.2 | 1454.8 | 1453.5 | 1427.6 | 1428.9 |
| 37.5° | 4385.3 | 3953.1 | 2612.5 | 1605.4 | 1397.8 | 1353.6 | 1358.8 | 1374.3 | 1382.2 | 1347.1 | 1343.2 |
| 40°   | 4625.4 | 4059.6 | 2438.6 | 1471.7 | 1328.9 | 1331.6 | 1317.3 | 1292.6 | 1283.5 | 1267.9 | 1265.4 |
| 42.5° | 4851.2 | 4133.5 | 2254.3 | 1360.1 | 1293.9 | 1323.8 | 1275.7 | 1217.3 | 1192.7 | 1207.0 | 1216.1 |
| 45°   | 5073.1 | 4216.6 | 2076.5 | 1267.9 | 1249.8 | 1300.4 | 1234.2 | 1169.3 | 1140.8 | 1147.2 | 1156.3 |
| 47.5° | 5344.4 | 4332.1 | 1862.4 | 1169.3 | 1182.3 | 1257.6 | 1208.3 | 1138.1 | 1095.4 | 1069.4 | 1061.6 |
| 50°   | 5701.3 | 4499.6 | 1584.7 | 1062.9 | 1110.9 | 1210.9 | 1186.2 | 1092.7 | 1046.1 | 994.1  | 981.1  |
| 52.5° | 6147.7 | 4657.8 | 1304.3 | 977.2  | 1052.5 | 1170.7 | 1149.9 | 1053.8 | 996.8  | 934.5  | 924.0  |
| 55°   | 6592.9 | 4679.9 | 1062.9 | 903.3  | 986.3  | 1116.1 | 1105.7 | 1022.6 | 942.2  | 891.6  | 881.2  |
| 57.5° | 6904.4 | 4471.0 | 900.7  | 841.0  | 922.7  | 1048.6 | 1065.5 | 985.0  | 896.8  | 857.8  | 851.4  |
| 60°   | 6909.5 | 3971.3 | 802.1  | 799.4  | 874.7  | 990.2  | 1024.0 | 940.9  | 868.3  | 842.3  | 837.1  |
| 62.5° | 6360.6 | 3200.4 | 738.5  | 768.3  | 839.6  | 942.2  | 992.9  | 916.3  | 861.7  | 851.4  | 846.2  |
| 65°   | 5331.4 | 2364.7 | 687.8  | 739.8  | 807.2  | 901.9  | 966.9  | 908.5  | 859.2  | 855.3  | 851.4  |
| 67.5° | 3936.3 | 1621.0 | 645.0  | 703.4  | 770.9  | 860.4  | 942.2  | 896.8  | 843.6  | 859.2  | 854.0  |
| 70°   | 2476.3 | 1082.4 | 604.8  | 661.8  | 722.9  | 812.4  | 909.8  | 876.1  | 824.1  | 815.0  | 798.1  |
| 72.5° | 1397.8 | 782.6  | 556.8  | 608.7  | 660.6  | 748.8  | 865.6  | 841.0  | 780.0  | 743.7  | 726.8  |
| 73°   | 1262.7 | 741.0  | 545.1  | 595.7  | 646.3  | 735.9  | 855.3  | 830.6  | 767.0  | 726.8  | 711.2  |
| 75°   | 924.0  | 606.1  | 491.8  | 542.5  | 586.7  | 676.2  | 806.0  | 778.7  | 709.9  | 661.8  | 651.5  |
| 77.5° | 669.6  | 467.2  | 423.1  | 468.5  | 507.5  | 593.1  | 731.9  | 700.8  | 633.3  | 607.3  | 597.0  |
| 80°   | 482.8  | 354.4  | 350.4  | 394.6  | 428.3  | 515.3  | 652.8  | 620.3  | 555.5  | 632.1  | 615.2  |
| 82.5° | 288.2  | 227.1  | 257.0  | 306.3  | 341.4  | 432.2  | 567.1  | 529.5  | 467.2  | 472.4  | 402.3  |
| 85°   | 137.6  | 128.5  | 159.6  | 201.1  | 225.9  | 295.9  | 472.4  | 442.5  | 373.8  | 306.3  | 299.8  |
| 87.5° | 61.0   | 58.4   | 76.6   | 89.5   | 120.7  | 177.8  | 323.2  | 286.8  | 271.3  | 162.2  | 127.2  |
| 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)