

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: P195845

Luminaire Tested: **NAV-AF-05-D-UNV-T3R-7050-600**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P195845  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24250)  
Test Lab: INNOVATION CENTER P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: LUMARK  
Catalog Number: NAV-AF-05-D-UNV-T3R-7050-600  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(5) 70 CRI, 5000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III  
ROADWAY OPTICS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 20151 lumens  
Efficiency: N/A  
Efficacy: 124.4 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')  
IES Classification: Type III - Medium - Full Cutoff  
BUG Rating: B2 - U0 - G3

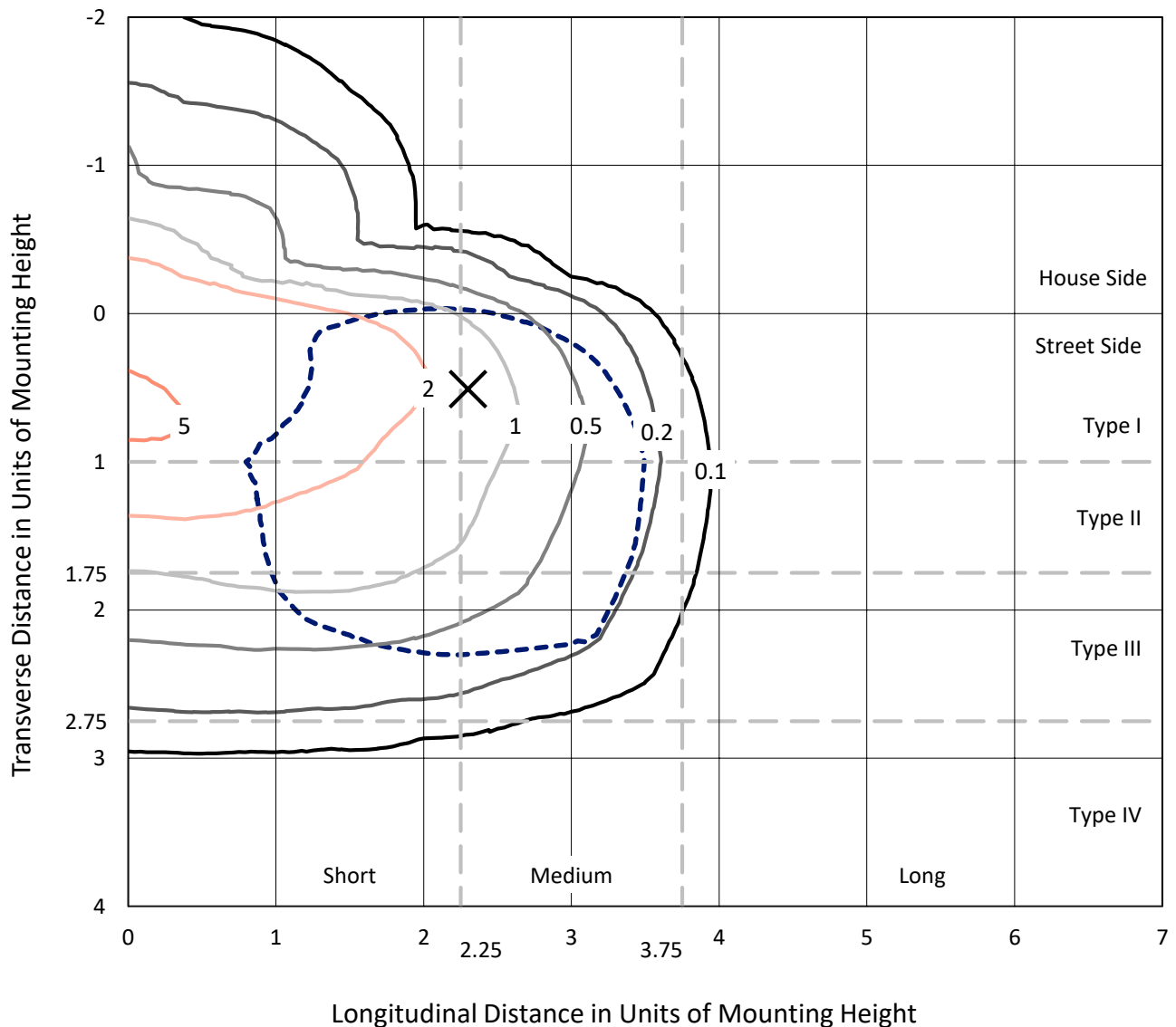
Input Watts (W): 162  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

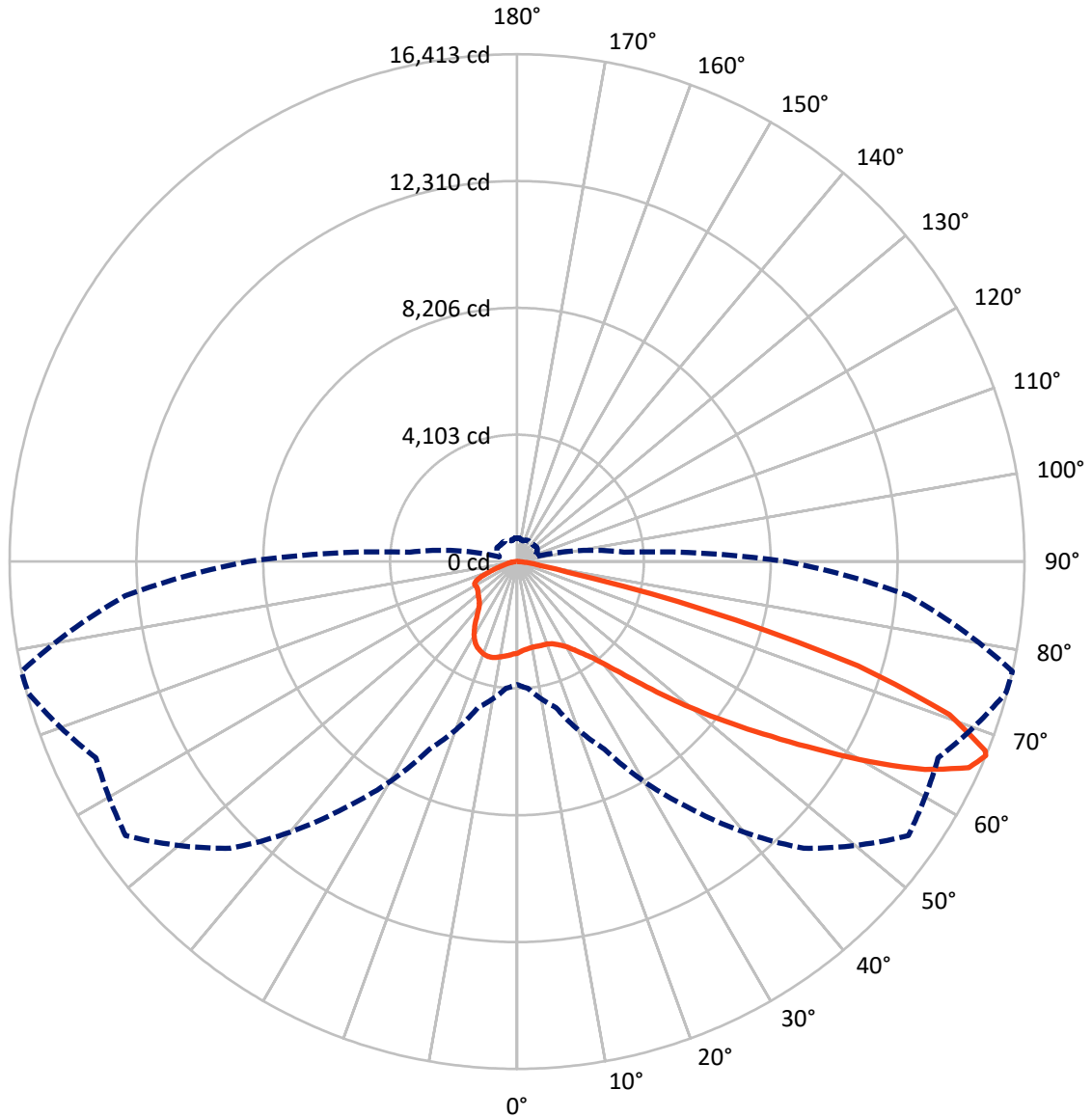
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 5.7 fc  
 Type III - Medium - Full Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 77.5-Deg Lateral    - - - Horizontal Cone Through 67-Deg Vertical

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**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 3462.9   | 0.0    | 3462.9  |
|                    | % Fixture | 17.2     | 0.0    | 17.2    |
| <b>Street Side</b> | Lumens    | 16688.1  | 0.0    | 16688.1 |
|                    | % Fixture | 82.8     | 0.0    | 82.8    |
| <b>Total</b>       | Lumens    | 20151.0  | 0.0    | 20151.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 264.1   | 1.3       |
| 10°-20°   | 731.5   | 3.6       |
| 20°-30°   | 1242.9  | 6.2       |
| 30°-40°   | 1988.3  | 9.9       |
| 40°-50°   | 3061.0  | 15.2      |
| 50°-60°   | 4246.9  | 21.1      |
| 60°-70°   | 5665.0  | 28.1      |
| 70°-80°   | 2696.0  | 13.4      |
| 80°-90°   | 255.3   | 1.3       |
| 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°    | 20151.0 | 100.0     |
| 0°-180°   | 20151.0 | 100.0     |

**Coefficient of Utilization**



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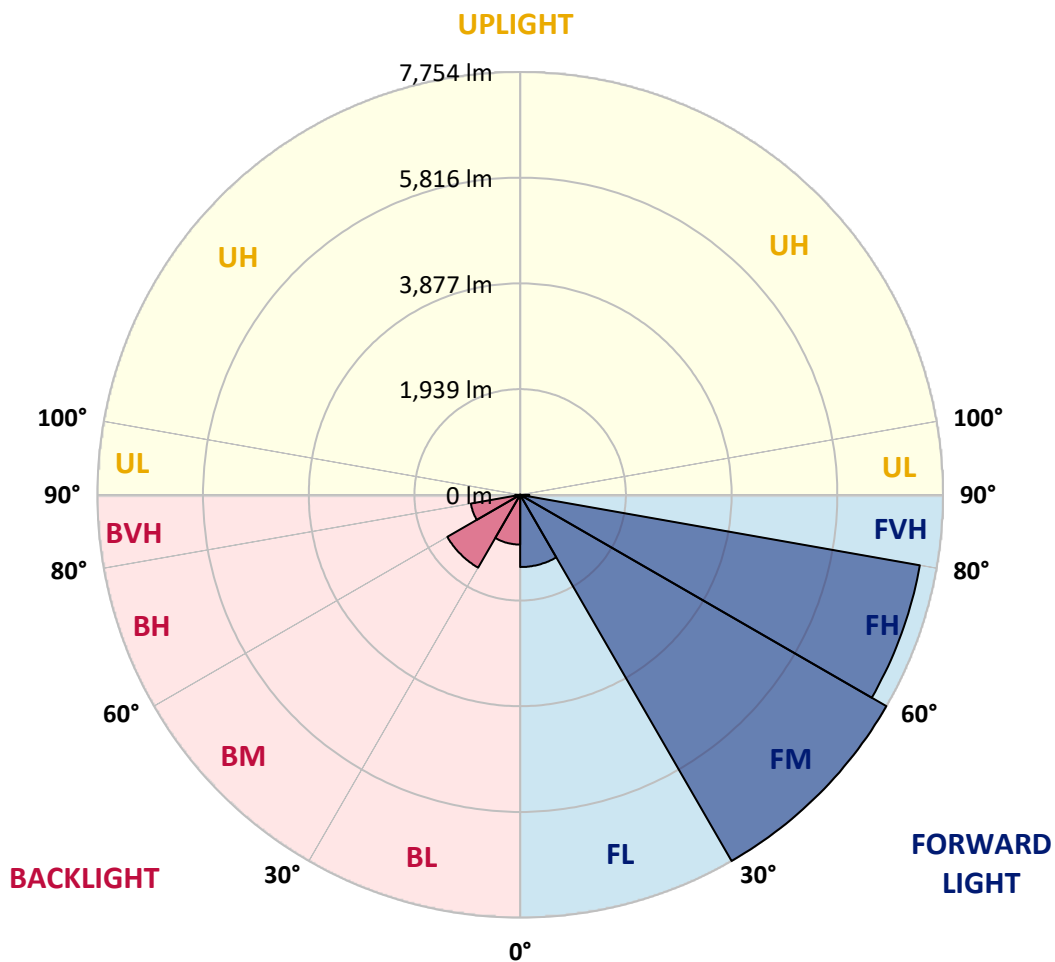
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 1325.1 | 6.6       |                         |      |         |
| FM   | (30°-60°)   | 7754.3 | 38.5      |                         |      |         |
| FH   | (60°-80°)   | 7442.8 | 36.9      |                         |      | G3/7500 |
| FVH  | (80°-90°)   | 165.8  | 0.8       |                         |      | G2/225  |
| BL   | (0°-30°)    | 913.4  | 4.5       | B2/1000                 |      |         |
| BM   | (30°-60°)   | 1541.9 | 7.7       | B2/2500                 |      |         |
| BH   | (60°-80°)   | 918.2  | 4.6       | B2/1000                 |      | G2/1000 |
| BVH  | (80°-90°)   | 89.5   | 0.4       |                         |      | G1/100  |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

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

Type III Medium





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°     | 55°     | 65°     | 75°     | 77.5°   | 85°     |
|-------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|
| 0°    | 2965.7 | 2965.7 | 2965.7 | 2965.7 | 2965.7 | 2965.7  | 2965.7  | 2965.7  | 2965.7  | 2965.7  | 2965.7  |
| 2.5°  | 2659.3 | 2671.7 | 2673.0 | 2709.1 | 2725.3 | 2766.4  | 2811.2  | 2851.1  | 2886.0  | 2898.4  | 2920.9  |
| 5°    | 2392.7 | 2392.7 | 2396.5 | 2420.1 | 2466.2 | 2532.2  | 2625.7  | 2727.8  | 2834.9  | 2861.1  | 2927.1  |
| 7.5°  | 2253.2 | 2255.7 | 2258.2 | 2281.9 | 2318.0 | 2376.5  | 2470.0  | 2609.5  | 2787.6  | 2831.2  | 2947.0  |
| 10°   | 2265.7 | 2262.0 | 2249.5 | 2244.5 | 2259.5 | 2296.8  | 2377.8  | 2521.0  | 2747.7  | 2815.0  | 2983.1  |
| 12.5° | 2461.2 | 2453.8 | 2412.7 | 2352.9 | 2298.1 | 2284.4  | 2340.4  | 2476.2  | 2729.0  | 2815.0  | 3044.2  |
| 15°   | 2796.3 | 2801.3 | 2720.3 | 2595.8 | 2452.5 | 2355.4  | 2347.9  | 2460.0  | 2722.8  | 2822.5  | 3115.2  |
| 17.5° | 3232.2 | 3234.7 | 3122.6 | 2942.0 | 2704.1 | 2503.6  | 2399.0  | 2460.0  | 2722.8  | 2829.9  | 3183.7  |
| 20°   | 3695.6 | 3678.2 | 3551.1 | 3324.4 | 3015.5 | 2709.1  | 2492.4  | 2474.9  | 2730.3  | 2841.1  | 3248.4  |
| 22.5° | 4092.9 | 4076.7 | 3943.5 | 3705.6 | 3351.8 | 2952.0  | 2618.2  | 2524.8  | 2771.4  | 2887.2  | 3339.4  |
| 25°   | 4440.5 | 4450.4 | 4320.9 | 4053.1 | 3686.9 | 3226.0  | 2806.3  | 2639.4  | 2857.3  | 2970.7  | 3451.5  |
| 27.5° | 4862.7 | 4844.0 | 4694.5 | 4439.2 | 4031.9 | 3510.0  | 3041.7  | 2783.8  | 2959.5  | 3071.6  | 3588.5  |
| 30°   | 5351.0 | 5342.2 | 5140.5 | 4877.6 | 4411.8 | 3827.6  | 3274.6  | 2939.5  | 3092.7  | 3209.8  | 3760.4  |
| 32.5° | 5943.9 | 5942.6 | 5725.9 | 5403.3 | 4839.0 | 4186.4  | 3549.9  | 3152.5  | 3287.1  | 3405.4  | 3988.3  |
| 35°   | 6615.2 | 6614.0 | 6389.8 | 5963.8 | 5331.0 | 4583.7  | 3873.7  | 3411.6  | 3527.4  | 3652.0  | 4259.8  |
| 37.5° | 7081.1 | 7073.6 | 6956.5 | 6543.0 | 5875.3 | 5045.8  | 4278.5  | 3760.4  | 3800.2  | 3939.7  | 4587.4  |
| 40°   | 7170.7 | 7215.6 | 7316.5 | 7072.3 | 6469.5 | 5559.0  | 4684.6  | 4135.3  | 4172.7  | 4352.0  | 4999.7  |
| 42.5° | 7073.6 | 7132.1 | 7467.2 | 7535.7 | 7063.6 | 6180.5  | 5192.8  | 4654.7  | 4702.0  | 4925.0  | 5484.2  |
| 45°   | 6988.9 | 7040.0 | 7459.7 | 7792.3 | 7650.3 | 6858.1  | 5826.8  | 5288.7  | 5378.4  | 5654.9  | 6037.3  |
| 47.5° | 6844.4 | 6891.7 | 7312.7 | 7838.4 | 7985.3 | 7510.8  | 6590.3  | 6051.0  | 6205.4  | 6540.5  | 6667.5  |
| 50°   | 6836.9 | 6858.1 | 7112.2 | 7683.9 | 8101.2 | 8006.5  | 7436.0  | 6942.8  | 7179.5  | 7565.6  | 7365.0  |
| 52.5° | 6647.6 | 6795.8 | 7026.2 | 7437.3 | 8103.7 | 8295.5  | 8269.3  | 7920.6  | 8285.5  | 8712.7  | 8129.8  |
| 55°   | 5489.2 | 5659.9 | 6739.8 | 7316.5 | 8088.7 | 8543.4  | 9030.4  | 8960.6  | 9531.1  | 9980.7  | 8986.8  |
| 57.5° | 5125.5 | 5197.8 | 5912.7 | 7352.6 | 8213.3 | 8953.1  | 9791.4  | 10077.9 | 10956.0 | 11446.8 | 10014.4 |
| 60°   | 5025.9 | 5101.8 | 5747.1 | 7370.0 | 8550.8 | 9699.2  | 10824.0 | 11339.7 | 12631.3 | 13152.0 | 11181.5 |
| 62.5° | 4915.0 | 5013.4 | 5759.5 | 7386.2 | 9143.7 | 10802.8 | 12194.1 | 12708.5 | 14351.4 | 14816.0 | 12275.1 |
| 65°   | 4591.2 | 4721.9 | 5529.1 | 7284.1 | 9792.7 | 12187.9 | 14005.2 | 14136.0 | 15772.6 | 16067.8 | 12935.2 |
| 67°   | 3977.1 | 4120.3 | 4896.3 | 6693.7 | 9732.9 | 13120.8 | 15453.8 | 15029.0 | 16376.7 | 16412.9 | 12721.0 |
| 67.5° | 3782.8 | 3931.0 | 4682.1 | 6448.3 | 9562.2 | 13242.9 | 15710.4 | 15152.3 | 16371.7 | 16331.9 | 12521.7 |
| 70°   | 2547.2 | 2714.1 | 3315.7 | 4734.4 | 7670.2 | 12324.9 | 15648.1 | 14772.4 | 15298.1 | 14840.9 | 10758.0 |
| 72.5° | 1264.3 | 1269.2 | 1654.1 | 2593.3 | 4647.2 | 8839.8  | 13053.6 | 12637.5 | 12400.9 | 11537.7 | 7894.4  |
| 75°   | 609.1  | 620.3  | 781.0  | 1145.9 | 1959.3 | 4563.8  | 8902.1  | 8527.2  | 7260.4  | 6286.4  | 3950.9  |
| 77.5° | 464.6  | 475.8  | 606.6  | 746.1  | 817.1  | 1488.5  | 4409.3  | 3563.6  | 2103.8  | 1680.3  | 1113.5  |
| 80°   | 358.7  | 379.9  | 511.9  | 573.0  | 540.6  | 596.6   | 1386.3  | 1091.1  | 818.3   | 751.1   | 551.8   |
| 82.5° | 280.3  | 292.7  | 434.7  | 434.7  | 373.7  | 399.8   | 645.2   | 630.3   | 508.2   | 458.4   | 296.4   |
| 85°   | 198.0  | 223.0  | 350.0  | 323.8  | 245.4  | 247.9   | 386.1   | 369.9   | 261.6   | 210.5   | 115.8   |
| 87.5° | 88.4   | 113.3  | 249.1  | 211.7  | 130.8  | 100.9   | 158.2   | 135.8   | 103.4   | 79.7    | 53.6    |
| 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°    | 2965.7 | 2965.7 | 2965.7 | 2965.7 | 2965.7 | 2965.7 | 2965.7 | 2965.7 | 2965.7 | 2965.7 | 2965.7 |
| 2.5°  | 2945.8 | 2965.7 | 2996.8 | 3015.5 | 3040.4 | 3050.4 | 3060.4 | 3077.8 | 3091.5 | 3087.8 | 3081.5 |
| 5°    | 2973.2 | 3006.8 | 3045.4 | 3057.9 | 3057.9 | 3045.4 | 3037.9 | 3039.2 | 3035.4 | 3033.0 | 3025.5 |
| 7.5°  | 3013.0 | 3059.1 | 3086.5 | 3074.1 | 3035.4 | 2986.9 | 2940.8 | 2913.4 | 2887.2 | 2871.0 | 2876.0 |
| 10°   | 3069.1 | 3120.1 | 3121.4 | 3066.6 | 2974.4 | 2868.5 | 2777.6 | 2719.1 | 2663.0 | 2638.1 | 2645.6 |
| 12.5° | 3150.0 | 3201.1 | 3157.5 | 3039.2 | 2877.3 | 2711.6 | 2544.7 | 2423.9 | 2315.5 | 2289.4 | 2281.9 |
| 15°   | 3237.2 | 3277.1 | 3179.9 | 2980.6 | 2737.8 | 2465.0 | 2184.7 | 2004.1 | 1883.3 | 1862.1 | 1854.7 |
| 17.5° | 3313.2 | 3335.6 | 3168.7 | 2876.0 | 2517.3 | 2087.6 | 1761.2 | 1639.2 | 1614.3 | 1626.7 | 1626.7 |
| 20°   | 3380.5 | 3373.0 | 3120.1 | 2714.1 | 2169.8 | 1669.1 | 1479.7 | 1478.5 | 1512.1 | 1543.3 | 1545.8 |
| 22.5° | 3465.2 | 3406.6 | 3042.9 | 2473.7 | 1755.0 | 1392.5 | 1360.2 | 1392.5 | 1429.9 | 1464.8 | 1468.5 |
| 25°   | 3566.1 | 3444.0 | 2939.5 | 2131.2 | 1411.2 | 1264.3 | 1278.0 | 1305.4 | 1329.0 | 1356.4 | 1357.7 |
| 27.5° | 3667.0 | 3472.6 | 2793.8 | 1728.8 | 1224.4 | 1182.0 | 1197.0 | 1208.2 | 1214.4 | 1231.9 | 1231.9 |
| 30°   | 3784.0 | 3495.1 | 2583.3 | 1385.1 | 1138.4 | 1109.8 | 1101.1 | 1096.1 | 1101.1 | 1124.7 | 1126.0 |
| 32.5° | 3931.0 | 3534.9 | 2295.6 | 1188.3 | 1098.6 | 1058.7 | 1013.9 | 989.0  | 1006.4 | 1048.8 | 1056.2 |
| 35°   | 4097.9 | 3582.3 | 1950.6 | 1109.8 | 1084.9 | 1033.8 | 951.6  | 913.0  | 919.2  | 957.8  | 964.1  |
| 37.5° | 4307.2 | 3643.3 | 1610.5 | 1091.1 | 1098.6 | 1031.3 | 923.0  | 868.2  | 840.8  | 842.0  | 840.8  |
| 40°   | 4575.0 | 3704.3 | 1341.5 | 1096.1 | 1128.5 | 1037.6 | 909.3  | 823.3  | 766.0  | 768.5  | 773.5  |
| 42.5° | 4855.2 | 3744.2 | 1170.8 | 1111.0 | 1164.6 | 1046.3 | 904.3  | 779.7  | 729.9  | 772.3  | 810.9  |
| 45°   | 5182.8 | 3733.0 | 1082.4 | 1124.7 | 1192.0 | 1050.0 | 885.6  | 774.7  | 733.6  | 860.7  | 932.9  |
| 47.5° | 5559.0 | 3684.4 | 1032.6 | 1131.0 | 1199.5 | 1048.8 | 871.9  | 790.9  | 764.8  | 985.2  | 1067.5 |
| 50°   | 5967.5 | 3608.4 | 992.7  | 1121.0 | 1195.7 | 1043.8 | 886.8  | 810.9  | 777.2  | 1012.6 | 1076.2 |
| 52.5° | 6414.7 | 3538.7 | 951.6  | 1098.6 | 1177.1 | 1028.8 | 905.5  | 802.1  | 742.4  | 932.9  | 981.5  |
| 55°   | 6944.0 | 3522.5 | 905.5  | 1060.0 | 1145.9 | 1012.6 | 895.6  | 774.7  | 703.7  | 827.1  | 857.0  |
| 57.5° | 7549.4 | 3623.4 | 845.7  | 1012.6 | 1103.6 | 980.3  | 871.9  | 759.8  | 690.0  | 752.3  | 768.5  |
| 60°   | 8317.9 | 3846.3 | 782.2  | 962.8  | 1051.3 | 931.7  | 850.7  | 763.5  | 693.8  | 741.1  | 744.8  |
| 62.5° | 8918.3 | 4046.9 | 724.9  | 901.8  | 981.5  | 873.1  | 828.3  | 767.3  | 705.0  | 756.1  | 749.8  |
| 65°   | 9136.2 | 3948.5 | 653.9  | 810.9  | 883.1  | 808.4  | 797.2  | 769.8  | 705.0  | 764.8  | 751.1  |
| 67°   | 8689.1 | 3478.9 | 586.7  | 719.9  | 789.7  | 751.1  | 767.3  | 759.8  | 692.5  | 763.5  | 739.9  |
| 67.5° | 8476.1 | 3313.2 | 569.2  | 705.0  | 764.8  | 733.6  | 759.8  | 754.8  | 688.8  | 761.0  | 733.6  |
| 70°   | 6990.1 | 2376.5 | 480.8  | 591.6  | 640.2  | 646.4  | 713.7  | 722.4  | 658.9  | 715.0  | 665.1  |
| 72.5° | 4973.6 | 1487.2 | 414.8  | 458.4  | 516.9  | 553.0  | 651.4  | 678.8  | 619.0  | 621.5  | 580.4  |
| 75°   | 2461.2 | 798.4  | 369.9  | 353.7  | 402.3  | 460.9  | 568.0  | 619.0  | 560.5  | 518.2  | 504.5  |
| 77.5° | 830.8  | 452.1  | 312.6  | 285.2  | 312.6  | 369.9  | 470.8  | 540.6  | 494.5  | 438.4  | 429.7  |
| 80°   | 429.7  | 328.8  | 244.1  | 229.2  | 246.6  | 286.5  | 368.7  | 449.7  | 422.2  | 424.7  | 350.0  |
| 82.5° | 267.8  | 200.5  | 175.6  | 174.4  | 186.8  | 219.2  | 271.5  | 365.0  | 362.5  | 310.1  | 225.4  |
| 85°   | 124.6  | 115.8  | 112.1  | 115.8  | 119.6  | 124.6  | 176.9  | 260.3  | 275.3  | 166.9  | 148.2  |
| 87.5° | 52.3   | 51.1   | 44.8   | 48.6   | 53.6   | 52.3   | 71.0   | 110.9  | 154.5  | 104.6  | 95.9   |
| 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)