

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: P882771

Luminaire Tested: **NAV-SB2D-750-U-T4FT**

Issue Date: 10/7/2024

Test Information

Test Method: LM-79-08
Report Number: P882771
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2405-108-24)
Test Lab: INNOVATION CENTER
Issue Date: 10/7/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-SB2D-750-U-T4FT
Description: NAVION ROADWAY AND AREA HIGH DENSITY LED LUMINAIRE
(2) 70 CRI, 5000K, 900mA LIGHTSQUARES WITH 26 LEDS EACH AND TYPE IV
FORWARD THROW OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 22100 lumens
Efficiency: N/A
Efficacy: 149.7 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B3 - U0 - G4

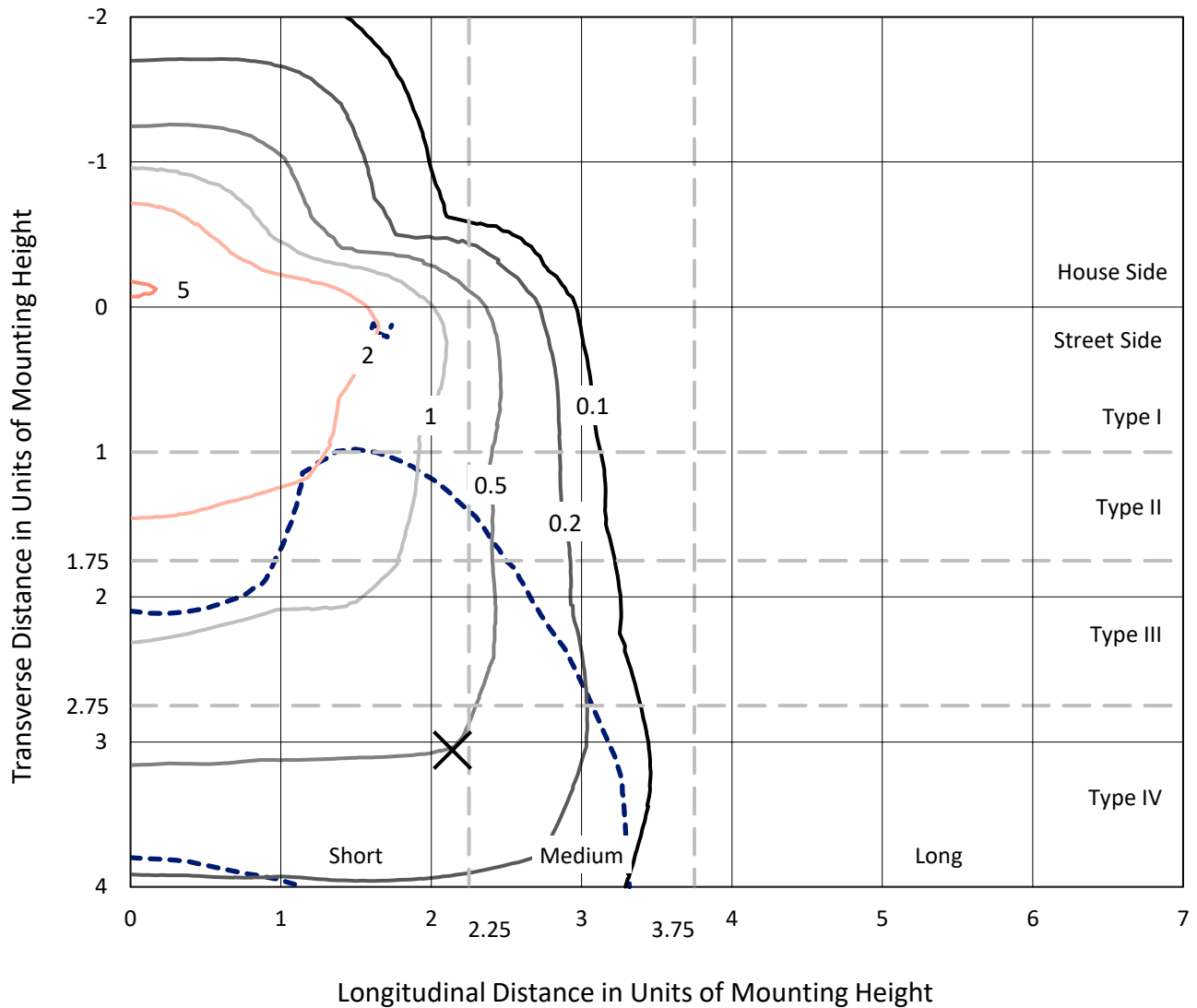
Input Watts (W): 147.6
Input Voltage (V): 120.0
Input Current (Ain): 1.234
Voltage Rise (V): NR
Power Factor: 0.999
Total Harmonic Distortion (THDi): 3.108
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Iso-Footcandle Lines of Horizontal Illumination

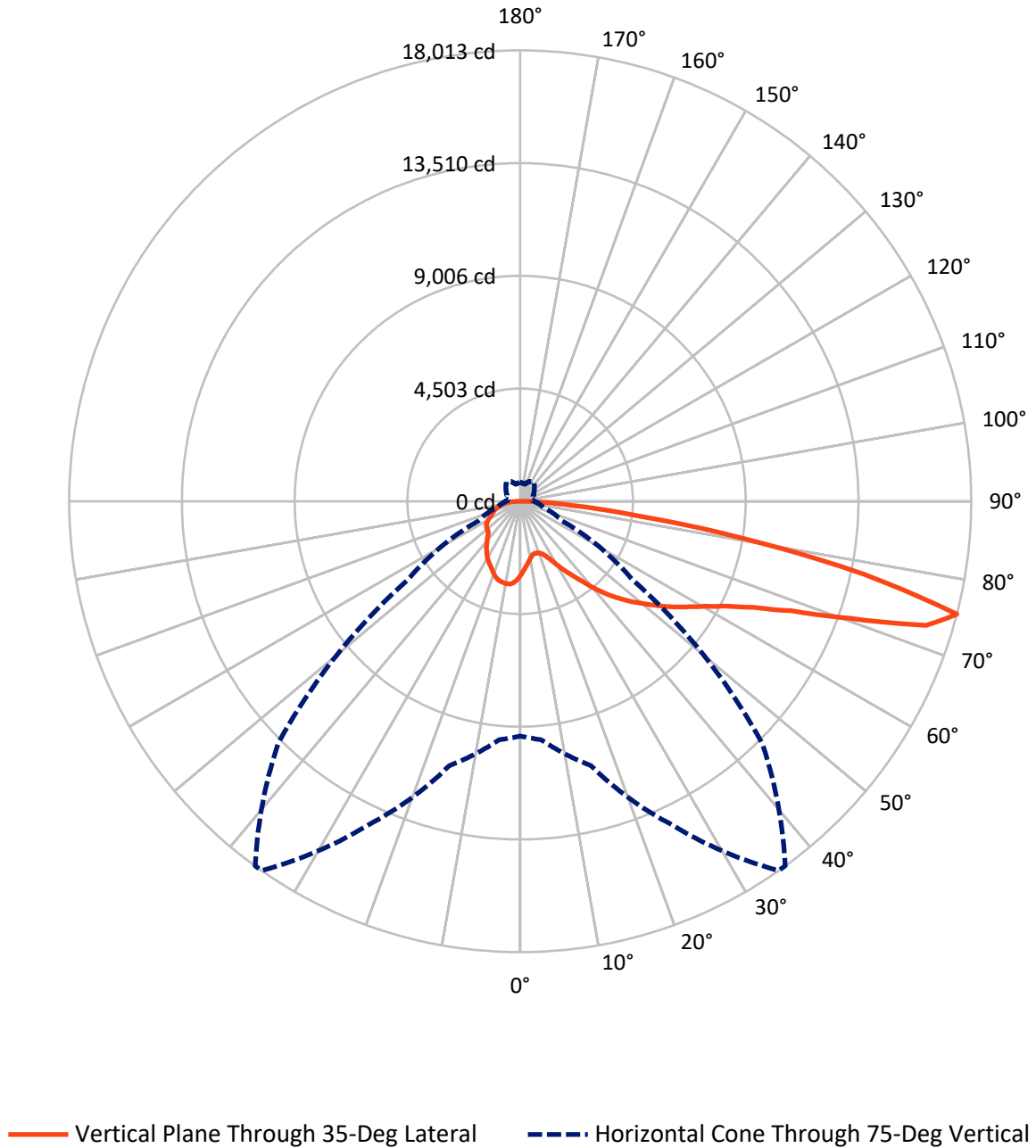
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 5.2 fc
 Type IV - Short - N/A

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Luminous Intensity Polar Plot



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FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 5259.2 | 0.0 | 5259.2 |
| | % Fixture | 23.8 | 0.0 | 23.8 |
| Street Side | Lumens | 16840.7 | 0.0 | 16840.7 |
| | % Fixture | 76.2 | 0.0 | 76.2 |
| Total | Lumens | 22100.0 | 0.0 | 22100.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 278.8 | 1.3 |
| 10°-20° | 804.3 | 3.6 |
| 20°-30° | 1350.6 | 6.1 |
| 30°-40° | 2099.0 | 9.5 |
| 40°-50° | 3115.4 | 14.1 |
| 50°-60° | 4301.1 | 19.5 |
| 60°-70° | 5218.2 | 23.6 |
| 70°-80° | 4312.4 | 19.5 |
| 80°-90° | 620.3 | 2.8 |
| 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° | 22100.0 | 100.0 |
| 0°-180° | 22100.0 | 100.0 |

Coefficient of Utilization



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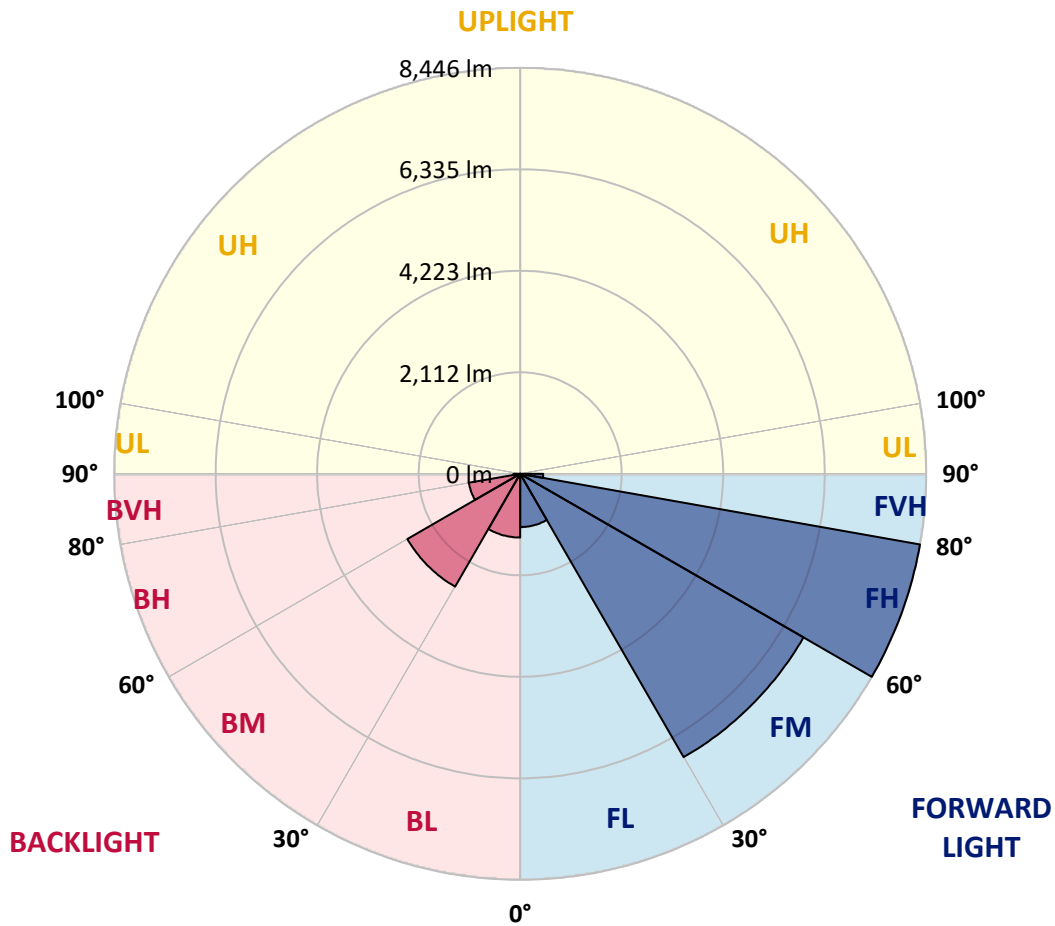
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|----------|
| | | | B | U | G |
| FL (0°-30°) | 1108.3 | 5.0 | | | |
| FM (30°-60°) | 6805.6 | 30.8 | | | |
| FH (60°-80°) | 8446.3 | 38.2 | | | G4/12000 |
| FVH (80°-90°) | 480.6 | 2.2 | | | G3/500 |
| BL (0°-30°) | 1325.4 | 6.0 | B3/2500 | | |
| BM (30°-60°) | 2709.9 | 12.3 | B3/5000 | | |
| BH (60°-80°) | 1084.3 | 4.9 | B3/2500 | | G3/2500 |
| BVH (80°-90°) | 139.7 | 0.6 | | | 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° | 2945.0 | 2945.0 | 2945.0 | 2945.0 | 2945.0 | 2945.0 | 2945.0 | 2945.0 | 2945.0 | 2945.0 | 2945.0 |
| 2.5° | 2715.6 | 2732.3 | 2739.5 | 2735.9 | 2753.8 | 2751.4 | 2776.5 | 2807.6 | 2850.6 | 2892.4 | 2953.3 |
| 5° | 2506.5 | 2524.4 | 2540.0 | 2554.3 | 2588.9 | 2599.7 | 2639.1 | 2698.9 | 2777.7 | 2857.8 | 2958.1 |
| 7.5° | 2311.8 | 2327.3 | 2351.2 | 2377.5 | 2436.0 | 2446.8 | 2512.5 | 2605.7 | 2715.6 | 2832.7 | 2971.3 |
| 10° | 2152.9 | 2168.4 | 2193.5 | 2223.4 | 2296.2 | 2309.4 | 2393.0 | 2517.3 | 2660.6 | 2808.8 | 2985.6 |
| 12.5° | 2084.8 | 2089.6 | 2103.9 | 2133.8 | 2197.1 | 2205.4 | 2297.4 | 2439.6 | 2606.9 | 2790.9 | 3007.1 |
| 15° | 2081.2 | 2090.8 | 2091.9 | 2107.5 | 2160.0 | 2163.6 | 2248.5 | 2389.4 | 2573.4 | 2787.3 | 3039.4 |
| 17.5° | 2117.0 | 2124.2 | 2113.5 | 2123.0 | 2167.2 | 2173.2 | 2240.1 | 2365.5 | 2562.7 | 2802.8 | 3094.3 |
| 20° | 2212.6 | 2218.6 | 2186.3 | 2173.2 | 2205.4 | 2210.2 | 2275.9 | 2381.1 | 2573.4 | 2835.1 | 3169.6 |
| 22.5° | 2415.7 | 2419.3 | 2340.4 | 2286.7 | 2289.1 | 2291.5 | 2348.8 | 2444.4 | 2615.2 | 2893.6 | 3265.2 |
| 25° | 2732.3 | 2729.9 | 2604.5 | 2500.5 | 2440.8 | 2427.7 | 2465.9 | 2547.1 | 2685.7 | 2971.3 | 3388.2 |
| 27.5° | 3102.7 | 3084.8 | 2959.3 | 2804.0 | 2673.8 | 2654.7 | 2646.3 | 2680.9 | 2786.1 | 3074.0 | 3538.7 |
| 30° | 3520.8 | 3504.1 | 3369.1 | 3166.0 | 2985.6 | 2954.5 | 2875.7 | 2857.8 | 2935.4 | 3213.8 | 3747.8 |
| 32.5° | 3979.6 | 3968.8 | 3807.6 | 3561.4 | 3320.1 | 3284.3 | 3151.7 | 3103.9 | 3164.8 | 3425.3 | 4039.3 |
| 35° | 4364.3 | 4354.7 | 4220.9 | 3967.7 | 3672.6 | 3628.4 | 3493.3 | 3439.6 | 3470.6 | 3696.5 | 4420.4 |
| 37.5° | 4712.0 | 4707.2 | 4592.5 | 4393.0 | 4088.3 | 4034.6 | 3882.8 | 3864.9 | 3858.9 | 4053.7 | 4882.8 |
| 40° | 5034.5 | 5022.6 | 4903.1 | 4798.0 | 4572.2 | 4523.2 | 4389.4 | 4373.9 | 4328.5 | 4493.3 | 5406.1 |
| 42.5° | 5391.8 | 5360.7 | 5187.5 | 5138.5 | 5077.5 | 5036.9 | 4956.9 | 4959.3 | 4858.9 | 4989.1 | 5960.4 |
| 45° | 5683.3 | 5665.3 | 5487.3 | 5458.7 | 5524.4 | 5507.6 | 5576.9 | 5594.9 | 5400.1 | 5508.8 | 6536.3 |
| 47.5° | 5996.3 | 5979.6 | 5829.0 | 5808.7 | 5986.7 | 5991.5 | 6236.4 | 6242.4 | 5928.2 | 6048.8 | 7113.3 |
| 50° | 6382.2 | 6358.3 | 6208.9 | 6234.0 | 6433.5 | 6451.5 | 6899.5 | 6858.9 | 6414.4 | 6597.2 | 7685.6 |
| 52.5° | 6636.6 | 6651.0 | 6618.7 | 6659.3 | 6931.7 | 6948.5 | 7551.8 | 7447.9 | 6895.9 | 7138.4 | 8247.1 |
| 55° | 6824.2 | 6852.9 | 6953.2 | 7046.4 | 7457.4 | 7474.1 | 8167.1 | 8008.2 | 7294.9 | 7640.2 | 8775.2 |
| 57.5° | 7065.5 | 7024.9 | 7212.5 | 7394.1 | 7956.8 | 8001.0 | 8765.6 | 8548.2 | 7648.6 | 8072.7 | 9137.2 |
| 60° | 7412.0 | 7383.3 | 7529.1 | 7797.9 | 8515.9 | 8586.4 | 9398.8 | 9034.4 | 7907.8 | 8415.6 | 9207.7 |
| 62.5° | 8114.5 | 8042.8 | 8065.5 | 8303.3 | 9220.8 | 9314.0 | 10113.3 | 9458.6 | 8036.9 | 8549.4 | 8830.1 |
| 65° | 9164.7 | 9041.6 | 8926.9 | 9091.8 | 10213.6 | 10305.6 | 10919.7 | 9791.9 | 7989.1 | 8290.1 | 7827.8 |
| 67.5° | 10487.2 | 10365.4 | 10224.4 | 10379.7 | 11676.0 | 11748.8 | 11914.9 | 9979.5 | 7612.7 | 7291.4 | 6056.0 |
| 70° | 11578.0 | 11532.6 | 11701.0 | 12340.2 | 14011.6 | 14014.0 | 13190.9 | 9824.1 | 6581.7 | 5169.5 | 3504.1 |
| 72.5° | 11433.4 | 11406.0 | 12293.6 | 14269.7 | 16955.4 | 16892.1 | 14398.7 | 8648.5 | 4433.6 | 2332.1 | 1313.0 |
| 75° | 9379.7 | 9557.7 | 10932.8 | 14235.0 | 18012.7 | 18004.4 | 13659.2 | 5498.1 | 1833.9 | 966.5 | 678.6 |
| 77.5° | 5029.8 | 5311.7 | 7097.8 | 10509.9 | 14061.8 | 14273.3 | 9603.1 | 1923.5 | 787.3 | 618.9 | 469.5 |
| 80° | 1640.3 | 1886.5 | 2829.1 | 5351.1 | 9137.2 | 9097.8 | 4115.8 | 755.1 | 538.8 | 438.5 | 325.0 |
| 82.5° | 696.5 | 725.2 | 1264.0 | 2526.8 | 4689.3 | 4616.4 | 1310.6 | 433.7 | 378.7 | 299.9 | 200.7 |
| 85° | 272.4 | 304.7 | 557.9 | 1168.4 | 2031.0 | 1986.8 | 473.1 | 215.0 | 242.5 | 195.9 | 119.5 |
| 87.5° | 89.6 | 108.7 | 199.5 | 400.2 | 632.0 | 609.3 | 115.9 | 74.1 | 105.1 | 89.6 | 43.0 |
| 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° | 2945.0 | 2945.0 | 2945.0 | 2945.0 | 2945.0 | 2945.0 | 2945.0 | 2945.0 | 2945.0 | 2945.0 | 2945.0 |
| 2.5° | 2970.1 | 2989.2 | 3011.9 | 3045.3 | 3074.0 | 3097.9 | 3123.0 | 3138.5 | 3144.5 | 3162.4 | 3161.2 |
| 5° | 2991.6 | 3033.4 | 3089.5 | 3144.5 | 3198.3 | 3230.5 | 3259.2 | 3273.5 | 3286.7 | 3296.2 | 3298.6 |
| 7.5° | 3027.4 | 3081.2 | 3169.6 | 3241.3 | 3286.7 | 3312.9 | 3332.1 | 3327.3 | 3332.1 | 3334.5 | 3338.0 |
| 10° | 3058.5 | 3133.7 | 3238.9 | 3307.0 | 3341.6 | 3342.8 | 3338.0 | 3321.3 | 3312.9 | 3314.1 | 3316.5 |
| 12.5° | 3095.5 | 3179.1 | 3292.6 | 3350.0 | 3359.5 | 3333.3 | 3312.9 | 3284.3 | 3273.5 | 3268.7 | 3266.4 |
| 15° | 3145.7 | 3241.3 | 3351.2 | 3372.7 | 3348.8 | 3315.3 | 3280.7 | 3234.1 | 3210.2 | 3191.1 | 3197.1 |
| 17.5° | 3206.6 | 3311.8 | 3396.6 | 3381.0 | 3329.7 | 3274.7 | 3218.6 | 3148.1 | 3099.1 | 3078.8 | 3080.0 |
| 20° | 3291.4 | 3385.8 | 3431.2 | 3363.1 | 3285.5 | 3201.8 | 3106.3 | 3020.2 | 2974.8 | 2954.5 | 2952.1 |
| 22.5° | 3394.2 | 3485.0 | 3464.7 | 3332.1 | 3222.1 | 3088.3 | 2968.9 | 2905.5 | 2882.8 | 2868.5 | 2870.9 |
| 25° | 3517.2 | 3594.9 | 3488.6 | 3286.7 | 3118.2 | 2937.8 | 2845.8 | 2825.5 | 2814.8 | 2804.0 | 2804.0 |
| 27.5° | 3677.3 | 3719.2 | 3506.5 | 3219.8 | 2955.7 | 2777.7 | 2744.3 | 2747.8 | 2744.3 | 2726.3 | 2729.9 |
| 30° | 3888.8 | 3880.4 | 3523.2 | 3111.0 | 2769.4 | 2633.2 | 2635.5 | 2651.1 | 2653.5 | 2641.5 | 2647.5 |
| 32.5° | 4167.2 | 4082.3 | 3531.6 | 2970.1 | 2591.3 | 2506.5 | 2508.9 | 2525.6 | 2537.6 | 2517.3 | 2526.8 |
| 35° | 4504.1 | 4317.7 | 3518.4 | 2793.2 | 2453.9 | 2385.8 | 2367.9 | 2372.7 | 2376.3 | 2357.2 | 2370.3 |
| 37.5° | 4897.1 | 4581.7 | 3459.9 | 2597.3 | 2340.4 | 2267.6 | 2229.3 | 2197.1 | 2178.0 | 2160.0 | 2172.0 |
| 40° | 5328.4 | 4869.7 | 3352.4 | 2406.2 | 2213.8 | 2142.1 | 2084.8 | 2023.8 | 1959.3 | 1935.4 | 1946.2 |
| 42.5° | 5780.0 | 5166.0 | 3222.1 | 2223.4 | 2068.1 | 2009.5 | 1948.6 | 1860.2 | 1763.4 | 1714.4 | 1720.4 |
| 45° | 6248.4 | 5469.4 | 3094.3 | 2043.0 | 1918.7 | 1893.6 | 1823.1 | 1716.8 | 1611.7 | 1549.5 | 1544.8 |
| 47.5° | 6707.1 | 5756.1 | 2906.7 | 1861.4 | 1778.9 | 1806.4 | 1751.5 | 1653.5 | 1536.4 | 1438.4 | 1427.7 |
| 50° | 7145.6 | 6025.0 | 2599.7 | 1677.4 | 1665.4 | 1780.1 | 1727.6 | 1586.6 | 1452.8 | 1327.3 | 1316.6 |
| 52.5° | 7580.5 | 6242.4 | 2206.6 | 1510.1 | 1604.5 | 1773.0 | 1696.5 | 1541.2 | 1377.5 | 1246.1 | 1231.8 |
| 55° | 7949.6 | 6354.7 | 1827.9 | 1366.8 | 1516.1 | 1712.0 | 1659.5 | 1487.4 | 1271.2 | 1131.4 | 1119.4 |
| 57.5° | 8159.9 | 6263.9 | 1512.5 | 1225.8 | 1394.2 | 1611.7 | 1596.1 | 1372.7 | 1144.5 | 1037.0 | 1022.7 |
| 60° | 8069.1 | 5895.9 | 1254.5 | 1102.7 | 1278.3 | 1503.0 | 1486.2 | 1259.2 | 1047.8 | 946.2 | 931.9 |
| 62.5° | 7568.5 | 5194.6 | 1050.2 | 995.2 | 1173.2 | 1391.8 | 1376.3 | 1172.0 | 973.7 | 875.7 | 860.2 |
| 65° | 6560.2 | 4225.7 | 891.3 | 905.6 | 1066.9 | 1258.0 | 1280.7 | 1099.1 | 915.2 | 819.6 | 804.0 |
| 67.5° | 5003.5 | 3060.9 | 767.0 | 827.9 | 962.9 | 1126.6 | 1192.3 | 1046.6 | 866.2 | 775.4 | 761.0 |
| 70° | 2851.8 | 1738.3 | 661.9 | 752.7 | 870.9 | 1004.8 | 1124.2 | 1004.8 | 813.6 | 738.3 | 728.8 |
| 72.5° | 1081.2 | 798.1 | 572.3 | 677.4 | 782.5 | 902.0 | 1049.0 | 939.0 | 752.7 | 696.5 | 687.0 |
| 75° | 577.0 | 486.2 | 481.5 | 589.0 | 681.0 | 801.7 | 954.6 | 874.5 | 707.3 | 735.9 | 759.8 |
| 77.5° | 393.1 | 344.1 | 402.6 | 504.2 | 569.9 | 690.5 | 854.2 | 776.6 | 612.9 | 610.5 | 562.7 |
| 80° | 272.4 | 243.7 | 327.4 | 406.2 | 440.9 | 580.6 | 745.5 | 666.7 | 499.4 | 465.9 | 445.6 |
| 82.5° | 163.7 | 158.9 | 244.9 | 303.5 | 311.8 | 448.0 | 617.7 | 559.1 | 408.6 | 356.0 | 358.4 |
| 85° | 89.6 | 94.4 | 156.5 | 178.0 | 181.6 | 313.0 | 483.9 | 432.5 | 314.2 | 264.0 | 266.4 |
| 87.5° | 25.1 | 32.3 | 57.3 | 70.5 | 87.2 | 162.5 | 287.9 | 256.9 | 157.7 | 109.9 | 109.9 |
| 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)