

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: P195414

Luminaire Tested: **NAV-AF-06-D-UNV-T4W-7060-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195414
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-06-D-UNV-T4W-7060-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(6) 70 CRI, 5700K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV WIDE OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 23453 lumens
Efficiency: N/A
Efficacy: 121.5 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type IV - Short - Semi-Cutoff
BUG Rating: B3 - U0 - G4

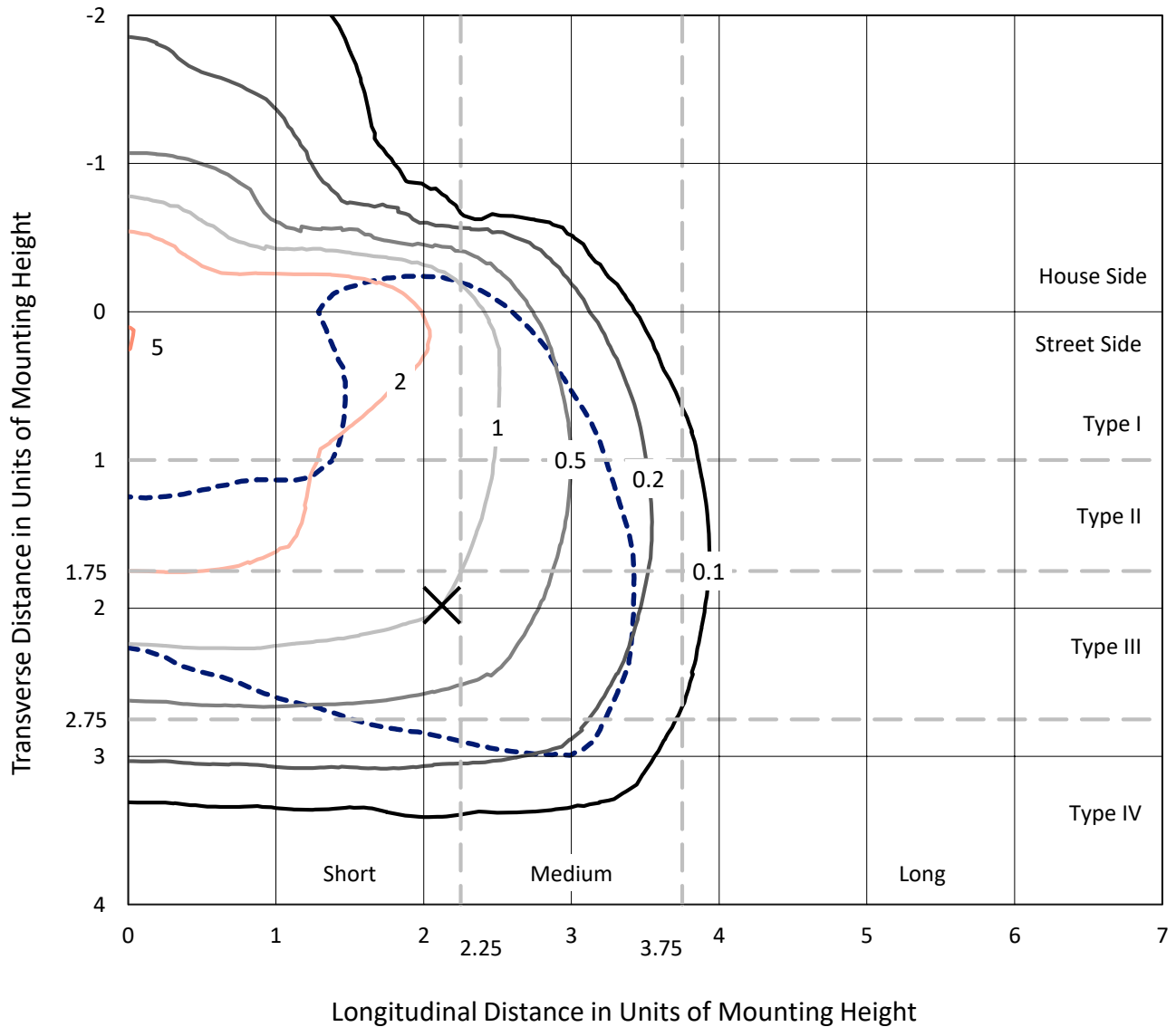
Input Watts (W): 193
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

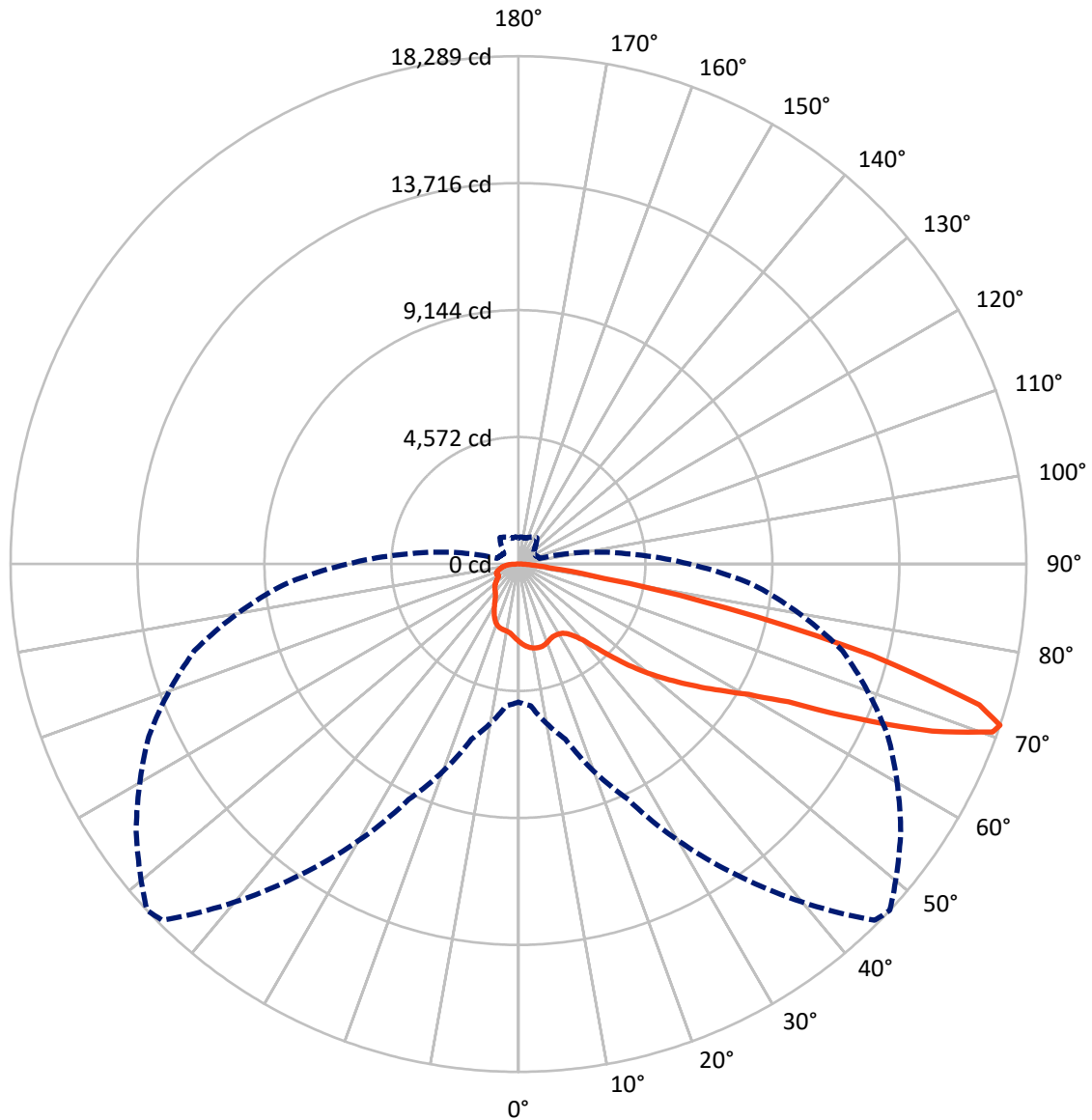
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 5.1 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 |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 5026.3 | 0.0 | 5026.3 |
| | % Fixture | 21.4 | 0.0 | 21.4 |
| Street Side | Lumens | 18426.7 | 0.0 | 18426.7 |
| | % Fixture | 78.6 | 0.0 | 78.6 |
| Total | Lumens | 23453.0 | 0.0 | 23453.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 266.3 | 1.1 |
| 10°-20° | 779.1 | 3.3 |
| 20°-30° | 1157.6 | 4.9 |
| 30°-40° | 1662.2 | 7.1 |
| 40°-50° | 2947.1 | 12.6 |
| 50°-60° | 5042.9 | 21.5 |
| 60°-70° | 7159.2 | 30.5 |
| 70°-80° | 3921.0 | 16.7 |
| 80°-90° | 517.6 | 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° | 23453.0 | 100.0 |
| 0°-180° | 23453.0 | 100.0 |



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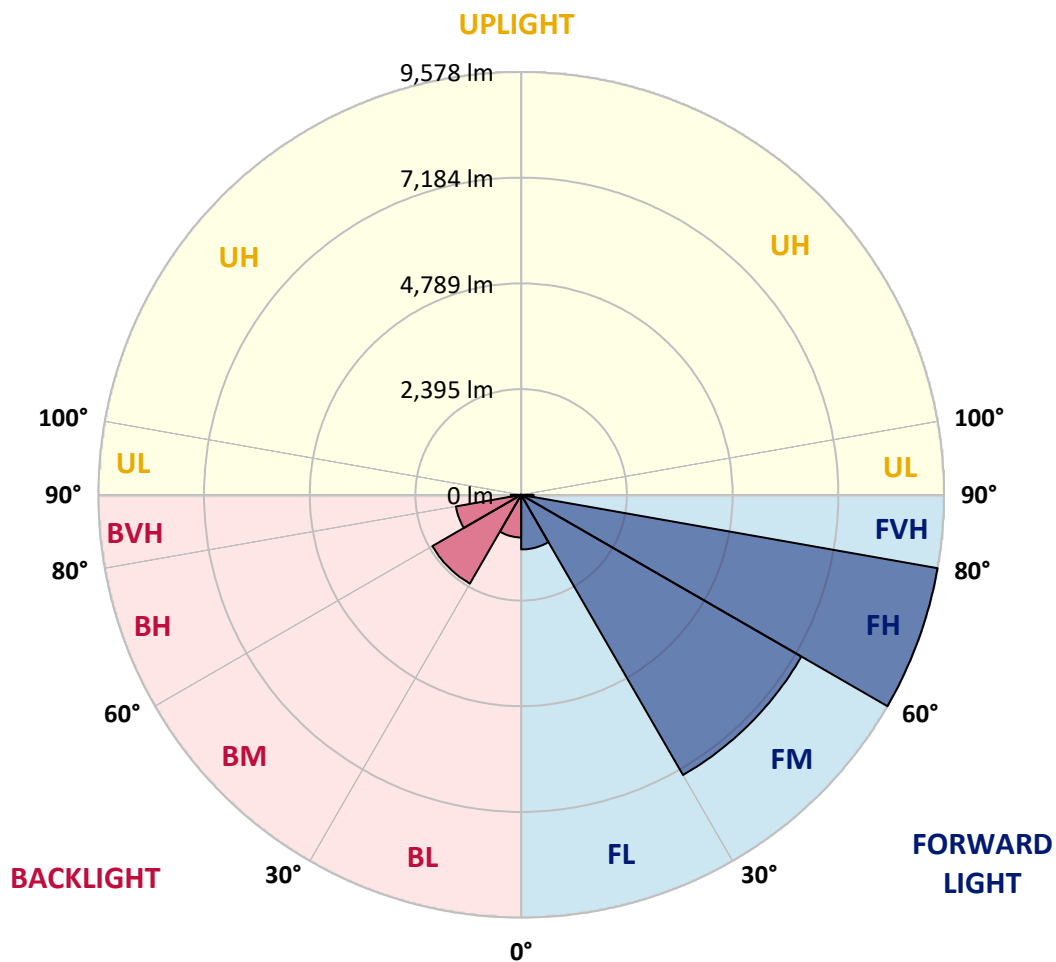
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|--------|-----------|-------------------------|------|----------|
| | | | | B | U | G |
| FL | (0°-30°) | 1237.7 | 5.3 | | | |
| FM | (30°-60°) | 7329.8 | 31.3 | | | |
| FH | (60°-80°) | 9578.4 | 40.8 | | | G4/12000 |
| FVH | (80°-90°) | 280.7 | 1.2 | | | G3/500 |
| BL | (0°-30°) | 965.2 | 4.1 | B2/1000 | | |
| BM | (30°-60°) | 2322.4 | 9.9 | B2/2500 | | |
| BH | (60°-80°) | 1501.8 | 6.4 | B3/2500 | | G3/2500 |
| BVH | (80°-90°) | 236.9 | 1.0 | | | G3/500 |
| 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° | 2789.0 | 2789.0 | 2789.0 | 2789.0 | 2789.0 | 2789.0 | 2789.0 | 2789.0 | 2789.0 | 2789.0 | 2789.0 |
| 2.5° | 2959.2 | 2953.1 | 2956.1 | 2945.5 | 2919.7 | 2892.3 | 2892.3 | 2863.4 | 2833.0 | 2802.6 | 2769.2 |
| 5° | 3143.1 | 3134.0 | 3126.4 | 3092.9 | 3042.8 | 2986.5 | 2977.4 | 2919.7 | 2857.3 | 2795.0 | 2734.2 |
| 7.5° | 3296.6 | 3287.5 | 3264.7 | 3203.9 | 3130.9 | 3047.3 | 3036.7 | 2960.7 | 2878.6 | 2792.0 | 2706.9 |
| 10° | 3406.0 | 3399.9 | 3355.9 | 3278.4 | 3193.2 | 3094.4 | 3076.2 | 2998.7 | 2901.4 | 2793.5 | 2685.6 |
| 12.5° | 3466.8 | 3457.7 | 3404.5 | 3313.3 | 3213.0 | 3112.7 | 3094.4 | 3020.0 | 2909.0 | 2790.5 | 2664.3 |
| 15° | 3442.5 | 3437.9 | 3387.8 | 3295.1 | 3194.8 | 3108.1 | 3092.9 | 3016.9 | 2904.5 | 2779.8 | 2644.6 |
| 17.5° | 3339.1 | 3349.8 | 3310.3 | 3219.1 | 3137.0 | 3076.2 | 3059.5 | 2988.1 | 2881.7 | 2754.0 | 2614.2 |
| 20° | 3196.3 | 3208.4 | 3188.7 | 3096.0 | 3048.9 | 3009.3 | 3000.2 | 2942.5 | 2843.7 | 2716.0 | 2577.7 |
| 22.5° | 3044.3 | 3054.9 | 3056.5 | 2969.8 | 2954.6 | 2939.4 | 2931.8 | 2890.8 | 2810.2 | 2693.2 | 2553.4 |
| 25° | 2939.4 | 2951.6 | 2954.6 | 2878.6 | 2887.7 | 2892.3 | 2890.8 | 2861.9 | 2804.2 | 2693.2 | 2556.4 |
| 27.5° | 2912.1 | 2918.1 | 2915.1 | 2845.2 | 2861.9 | 2887.7 | 2889.3 | 2883.2 | 2828.5 | 2723.6 | 2599.0 |
| 30° | 3006.3 | 3009.3 | 2971.3 | 2866.5 | 2883.2 | 2916.6 | 2918.1 | 2915.1 | 2880.1 | 2802.6 | 2694.7 |
| 32.5° | 3413.6 | 3410.6 | 3279.9 | 3009.3 | 2951.6 | 2963.7 | 2968.3 | 2995.7 | 2998.7 | 2933.3 | 2833.0 |
| 35° | 4033.7 | 4032.2 | 3880.2 | 3418.2 | 3146.1 | 3082.3 | 3088.4 | 3130.9 | 3168.9 | 3124.8 | 3067.1 |
| 37.5° | 4716.1 | 4720.7 | 4628.0 | 4001.8 | 3565.6 | 3299.6 | 3293.6 | 3325.5 | 3393.9 | 3409.1 | 3416.7 |
| 40° | 5473.0 | 5495.8 | 5491.3 | 4672.1 | 4153.8 | 3670.5 | 3609.7 | 3573.2 | 3705.4 | 3789.0 | 3896.9 |
| 42.5° | 6337.8 | 6331.8 | 6334.8 | 5407.7 | 4825.6 | 4254.1 | 4141.6 | 3971.4 | 4124.9 | 4269.3 | 4506.4 |
| 45° | 7081.1 | 7105.4 | 7123.6 | 6190.4 | 5577.9 | 4921.3 | 4807.3 | 4497.3 | 4635.6 | 4851.4 | 5213.1 |
| 47.5° | 7828.8 | 7786.3 | 7819.7 | 7061.3 | 6415.4 | 5682.8 | 5535.4 | 5117.4 | 5246.6 | 5550.6 | 6100.7 |
| 50° | 8699.7 | 8680.0 | 8528.0 | 8198.2 | 7427.6 | 6454.9 | 6261.8 | 5764.9 | 5953.3 | 6359.1 | 7196.6 |
| 52.5° | 9480.9 | 9374.5 | 9256.0 | 9091.8 | 8423.1 | 7236.1 | 6991.4 | 6438.2 | 6784.7 | 7287.8 | 8556.8 |
| 55° | 9766.7 | 9695.2 | 9838.1 | 10050.9 | 9476.4 | 8032.5 | 7758.9 | 7223.9 | 7722.4 | 8350.1 | 10157.3 |
| 57.5° | 10070.6 | 10095.0 | 10417.2 | 10847.3 | 10473.4 | 8882.1 | 8585.7 | 8154.1 | 8751.4 | 9538.7 | 11946.1 |
| 60° | 10222.6 | 10319.9 | 10962.8 | 11769.8 | 11421.8 | 9813.8 | 9529.6 | 9222.5 | 9892.8 | 10851.8 | 13730.5 |
| 62.5° | 10248.5 | 10379.2 | 11289.6 | 12093.6 | 12727.4 | 11240.9 | 10912.6 | 10579.8 | 11318.4 | 12303.3 | 15022.4 |
| 65° | 9774.3 | 9974.9 | 11260.7 | 12491.8 | 13917.4 | 13625.6 | 13417.4 | 12836.8 | 13227.4 | 13581.5 | 15242.7 |
| 67.5° | 8380.5 | 8599.4 | 10146.6 | 12327.6 | 14871.9 | 16099.9 | 16060.4 | 15203.2 | 14701.7 | 14075.5 | 13608.9 |
| 70° | 6150.9 | 6327.2 | 7813.6 | 10538.8 | 14455.4 | 18042.3 | 18112.2 | 16736.8 | 15113.5 | 13026.8 | 10119.3 |
| 71° | 4974.5 | 5126.5 | 6527.8 | 9356.3 | 13643.8 | 18142.6 | 18288.6 | 16805.2 | 14684.9 | 12079.9 | 8471.7 |
| 72.5° | 3096.0 | 3181.1 | 4334.7 | 7061.3 | 11748.6 | 17109.1 | 17355.4 | 15929.7 | 13335.3 | 10210.5 | 5988.3 |
| 75° | 1168.8 | 1202.2 | 1608.0 | 3114.2 | 7012.7 | 12853.5 | 13151.4 | 12038.9 | 9368.5 | 5828.7 | 2506.3 |
| 77.5° | 627.7 | 644.4 | 797.9 | 1294.9 | 2810.2 | 7368.3 | 7751.3 | 6866.8 | 4494.2 | 2039.7 | 1024.4 |
| 80° | 421.0 | 431.6 | 551.7 | 767.5 | 1291.9 | 2805.7 | 3124.8 | 2757.0 | 1682.5 | 1164.2 | 729.5 |
| 82.5° | 272.1 | 278.1 | 375.4 | 504.6 | 834.4 | 986.4 | 1126.2 | 1176.4 | 1050.2 | 834.4 | 440.8 |
| 85° | 179.3 | 183.9 | 247.7 | 322.2 | 516.8 | 486.4 | 498.5 | 652.0 | 715.9 | 550.2 | 224.9 |
| 87.5° | 103.4 | 106.4 | 148.9 | 165.7 | 232.5 | 182.4 | 197.6 | 310.1 | 425.6 | 358.7 | 129.2 |
| 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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CATALOG NUMBER: NAV-AF-06-D-UNV-T4W-7060-600

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|---------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 2789.0 | 2789.0 | 2789.0 | 2789.0 | 2789.0 | 2789.0 | 2789.0 | 2789.0 | 2789.0 | 2789.0 | 2789.0 |
| 2.5° | 2754.0 | 2741.8 | 2714.5 | 2697.8 | 2690.2 | 2687.1 | 2684.1 | 2690.2 | 2690.2 | 2687.1 | 2681.0 |
| 5° | 2703.8 | 2681.0 | 2635.4 | 2603.5 | 2586.8 | 2582.3 | 2588.3 | 2595.9 | 2600.5 | 2600.5 | 2595.9 |
| 7.5° | 2667.4 | 2633.9 | 2573.1 | 2529.1 | 2503.2 | 2495.6 | 2512.3 | 2539.7 | 2557.9 | 2567.1 | 2568.6 |
| 10° | 2637.0 | 2591.4 | 2524.5 | 2478.9 | 2457.6 | 2454.6 | 2475.9 | 2510.8 | 2548.8 | 2565.5 | 2568.6 |
| 12.5° | 2609.6 | 2557.9 | 2485.0 | 2442.4 | 2427.2 | 2434.8 | 2463.7 | 2495.6 | 2539.7 | 2564.0 | 2565.5 |
| 15° | 2583.8 | 2530.6 | 2453.1 | 2409.0 | 2405.9 | 2418.1 | 2445.5 | 2471.3 | 2504.7 | 2535.1 | 2535.1 |
| 17.5° | 2553.4 | 2495.6 | 2415.1 | 2374.0 | 2374.0 | 2384.7 | 2402.9 | 2416.6 | 2437.9 | 2466.7 | 2465.2 |
| 20° | 2516.9 | 2457.6 | 2375.6 | 2333.0 | 2323.9 | 2317.8 | 2317.8 | 2320.8 | 2339.1 | 2364.9 | 2369.5 |
| 22.5° | 2489.5 | 2428.7 | 2342.1 | 2290.4 | 2249.4 | 2209.9 | 2193.2 | 2187.1 | 2203.8 | 2228.1 | 2234.2 |
| 25° | 2489.5 | 2428.7 | 2331.5 | 2244.8 | 2144.5 | 2068.5 | 2036.6 | 2027.5 | 2044.2 | 2067.0 | 2076.1 |
| 27.5° | 2530.6 | 2469.8 | 2355.8 | 2203.8 | 2019.9 | 1898.3 | 1860.3 | 1852.7 | 1867.9 | 1886.2 | 1895.3 |
| 30° | 2626.3 | 2567.1 | 2425.7 | 2156.7 | 1881.6 | 1722.0 | 1679.5 | 1671.9 | 1679.5 | 1687.1 | 1697.7 |
| 32.5° | 2785.9 | 2735.8 | 2539.7 | 2114.1 | 1741.8 | 1562.4 | 1510.7 | 1498.6 | 1501.6 | 1503.1 | 1512.3 |
| 35° | 3045.8 | 3023.0 | 2691.7 | 2064.0 | 1609.5 | 1431.7 | 1378.5 | 1354.2 | 1352.7 | 1360.3 | 1370.9 |
| 37.5° | 3444.0 | 3457.7 | 2887.7 | 1991.0 | 1500.1 | 1339.0 | 1285.8 | 1261.5 | 1249.3 | 1264.5 | 1276.7 |
| 40° | 4006.4 | 4038.3 | 3114.2 | 1892.2 | 1410.4 | 1284.3 | 1228.1 | 1205.3 | 1188.5 | 1184.0 | 1190.1 |
| 42.5° | 4737.4 | 4728.3 | 3345.2 | 1766.1 | 1313.2 | 1247.8 | 1188.5 | 1164.2 | 1136.9 | 1101.9 | 1094.3 |
| 45° | 5603.7 | 5473.0 | 3538.2 | 1611.1 | 1202.2 | 1212.9 | 1152.1 | 1118.6 | 1076.1 | 1024.4 | 1018.3 |
| 47.5° | 6626.6 | 6266.4 | 3656.8 | 1445.4 | 1098.9 | 1167.3 | 1111.0 | 1059.3 | 997.0 | 963.6 | 959.0 |
| 50° | 7859.2 | 7195.0 | 3740.4 | 1276.7 | 1006.2 | 1109.5 | 1053.3 | 984.9 | 924.1 | 915.0 | 913.4 |
| 52.5° | 9318.3 | 8290.9 | 3843.7 | 1124.7 | 933.2 | 1035.0 | 995.5 | 925.6 | 877.0 | 881.5 | 881.5 |
| 55° | 10870.1 | 9424.7 | 3846.8 | 1004.6 | 869.4 | 948.4 | 953.0 | 896.7 | 858.7 | 873.9 | 878.5 |
| 57.5° | 12285.1 | 10415.6 | 3544.3 | 919.5 | 808.6 | 880.0 | 939.3 | 907.4 | 878.5 | 931.7 | 936.2 |
| 60° | 13519.2 | 11178.6 | 2893.8 | 849.6 | 758.4 | 854.2 | 969.7 | 972.7 | 966.6 | 1111.0 | 1121.7 |
| 62.5° | 13970.6 | 11186.2 | 2054.9 | 790.3 | 731.1 | 869.4 | 1033.5 | 1038.1 | 1038.1 | 1171.8 | 1191.6 |
| 65° | 13338.3 | 10254.5 | 1367.9 | 755.4 | 712.8 | 902.8 | 1085.2 | 1065.4 | 1018.3 | 1111.0 | 1089.7 |
| 67.5° | 11110.2 | 7982.3 | 1000.1 | 732.6 | 687.0 | 904.3 | 1130.8 | 1080.6 | 1000.1 | 1079.1 | 1042.6 |
| 70° | 7635.8 | 5079.4 | 837.4 | 711.3 | 656.6 | 864.8 | 1155.1 | 1076.1 | 972.7 | 1006.2 | 957.5 |
| 71° | 6146.3 | 4053.5 | 794.9 | 703.7 | 644.4 | 842.0 | 1158.1 | 1070.0 | 959.0 | 980.3 | 936.2 |
| 72.5° | 4048.9 | 2497.1 | 743.2 | 687.0 | 626.2 | 802.5 | 1150.5 | 1056.3 | 940.8 | 942.3 | 913.4 |
| 75° | 1597.4 | 1035.0 | 668.7 | 649.0 | 574.5 | 738.7 | 1117.1 | 1027.4 | 905.8 | 875.4 | 863.3 |
| 77.5° | 807.0 | 676.3 | 588.2 | 595.8 | 513.7 | 673.3 | 1070.0 | 980.3 | 857.2 | 816.2 | 807.0 |
| 80° | 589.7 | 513.7 | 503.1 | 516.8 | 445.3 | 609.5 | 1010.7 | 916.5 | 794.9 | 837.4 | 819.2 |
| 82.5° | 358.7 | 313.1 | 393.6 | 427.1 | 372.4 | 544.1 | 940.8 | 842.0 | 715.9 | 659.6 | 638.3 |
| 85° | 170.2 | 183.9 | 284.2 | 314.6 | 275.1 | 434.7 | 860.2 | 759.9 | 624.7 | 539.6 | 548.7 |
| 87.5° | 83.6 | 101.8 | 162.6 | 188.5 | 180.9 | 319.2 | 649.0 | 589.7 | 492.4 | 405.8 | 396.7 |
| 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)