

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: P196902

Luminaire Tested: **NAV-AF-06-D-UNV-5NQ-8030-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196902
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24130)
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-5NQ-8030-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(6) 80 CRI, 3000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE V NARROW OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 19909 lumens
Efficiency: N/A
Efficacy: 103.2 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type V - Short - Full Cutoff
BUG Rating: B4 - U0 - G2

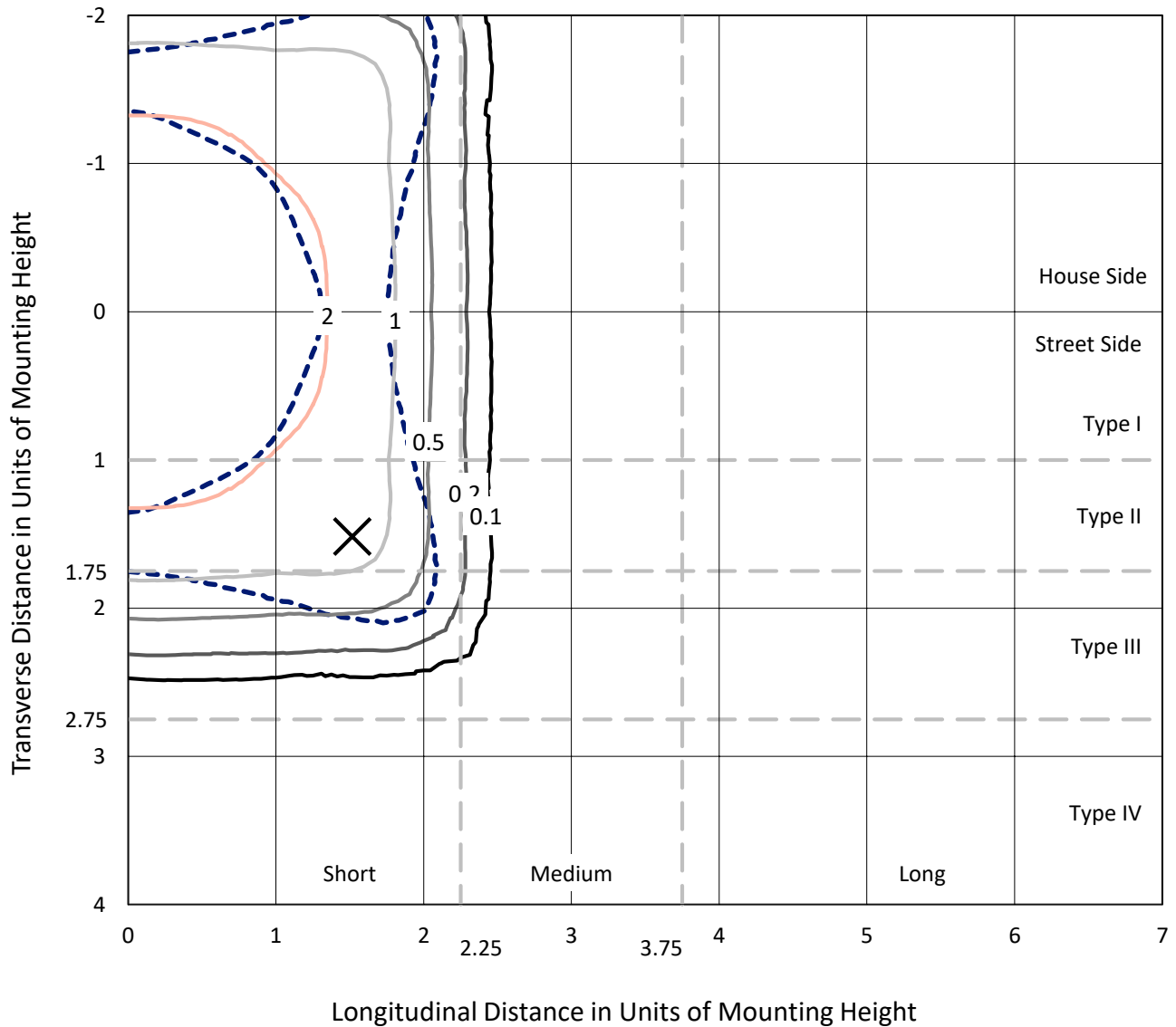
Input Watts (W): 193
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

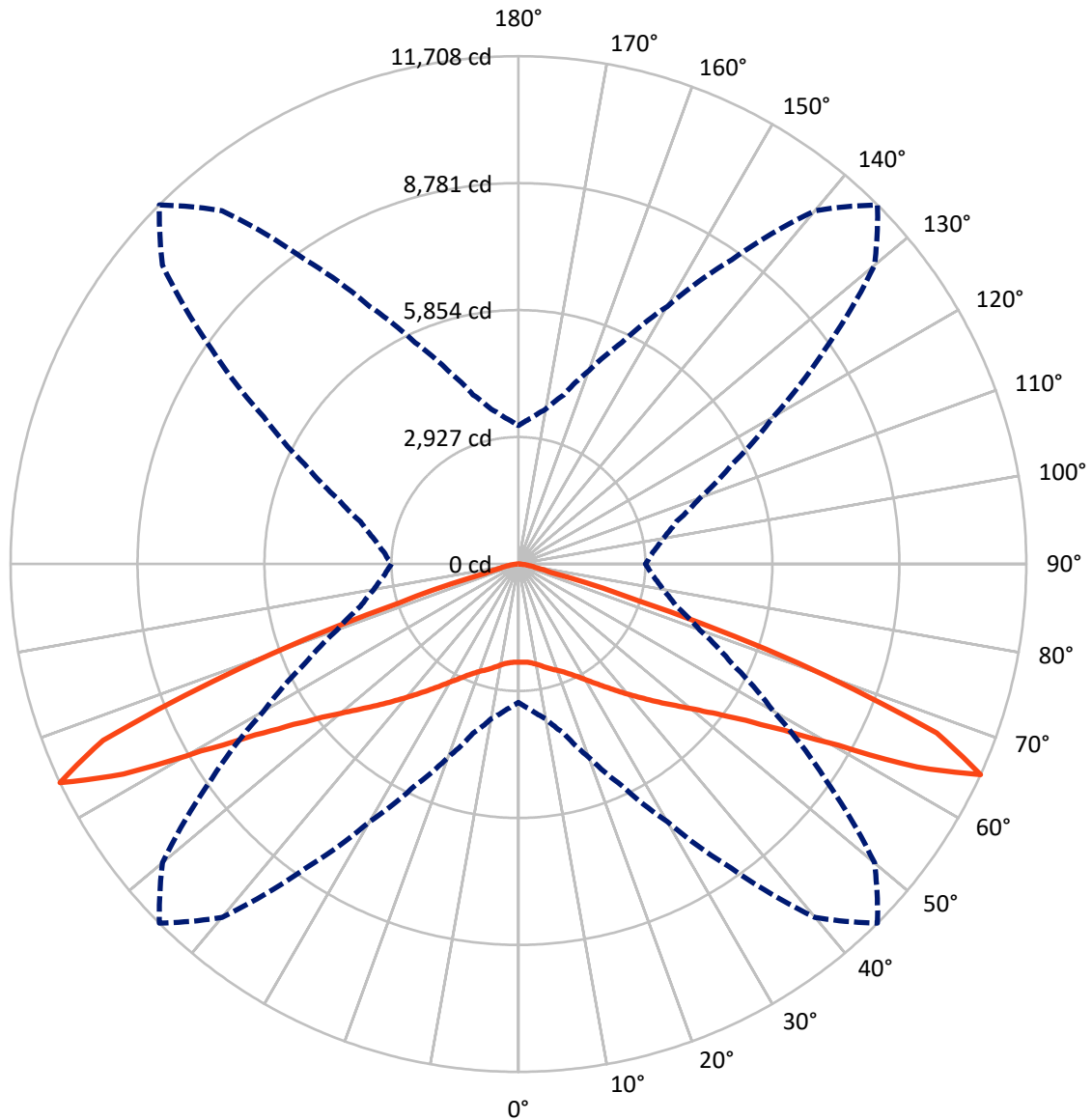
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 3.6 fc
 Type V - Short - Full Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 45-Deg Lateral - - - Horizontal Cone Through 65-Deg Vertical

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FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 9954.5 | 0.0 | 9954.5 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Street Side | Lumens | 9954.5 | 0.0 | 9954.5 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Total | Lumens | 19909.0 | 0.0 | 19909.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 220.5 | 1.1 |
| 10°-20° | 706.8 | 3.6 |
| 20°-30° | 1318.5 | 6.6 |
| 30°-40° | 2223.3 | 11.2 |
| 40°-50° | 3611.2 | 18.1 |
| 50°-60° | 5658.2 | 28.4 |
| 60°-70° | 5341.0 | 26.8 |
| 70°-80° | 719.8 | 3.6 |
| 80°-90° | 109.6 | 0.6 |
| 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° | 19909.0 | 100.0 |
| 0°-180° | 19909.0 | 100.0 |



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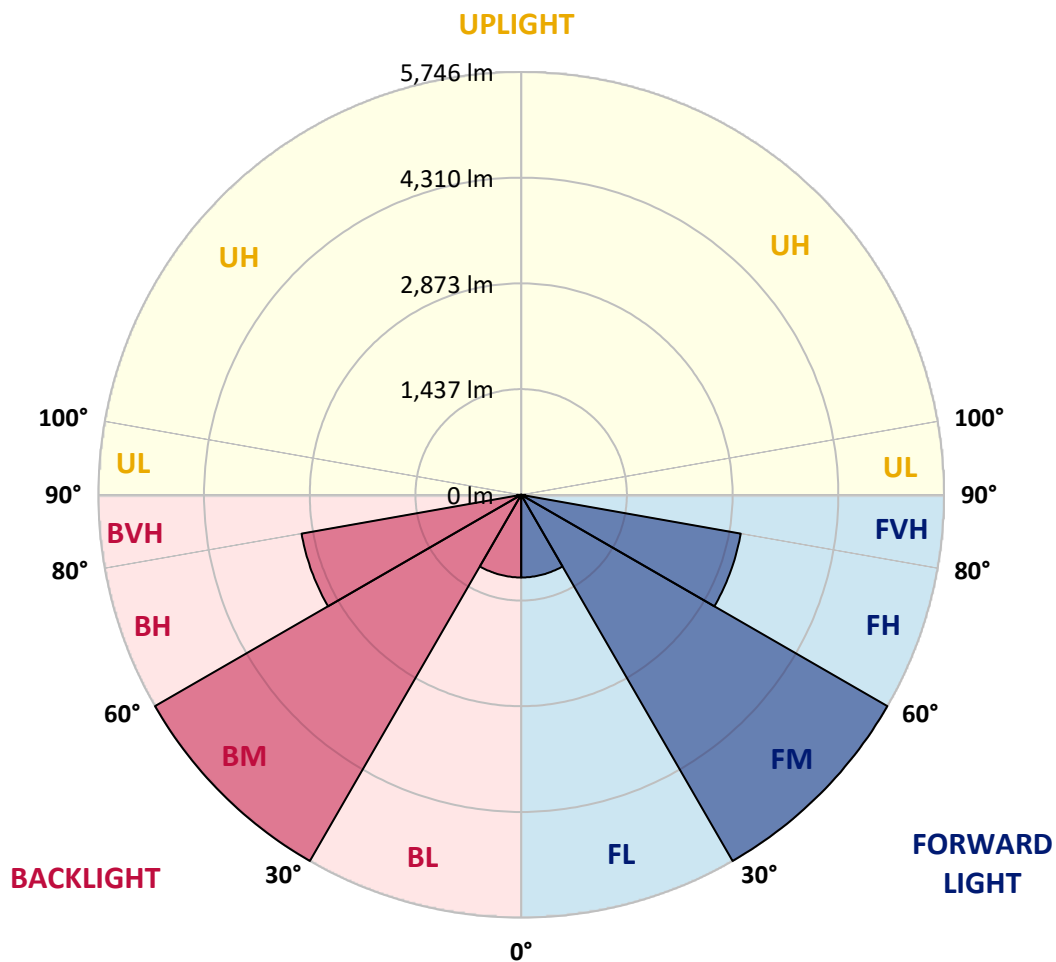
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|--------|-----------|-------------------------|------|---------|
| | | | | B | U | G |
| FL | (0°-30°) | 1122.9 | 5.6 | | | |
| FM | (30°-60°) | 5746.3 | 28.9 | | | |
| FH | (60°-80°) | 3030.4 | 15.2 | | | G2/5000 |
| FVH | (80°-90°) | 54.8 | 0.3 | | | G1/100 |
| BL | (0°-30°) | 1122.9 | 5.6 | B3/2500 | | |
| BM | (30°-60°) | 5746.3 | 28.9 | B4/8500 | | |
| BH | (60°-80°) | 3030.4 | 15.2 | B4/5000 | | G2/5000 |
| BVH | (80°-90°) | 54.8 | 0.3 | | | G1/100 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B4-U0-G2

Type V Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 10° | 15° | 20° | 25° | 30° | 35° | 40° | 45° | 50° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|
| 0° | 2264.6 | 2264.6 | 2264.6 | 2264.6 | 2264.6 | 2264.6 | 2264.6 | 2264.6 | 2264.6 | 2264.6 | 2264.6 |
| 2.5° | 2283.2 | 2283.2 | 2286.9 | 2285.7 | 2280.7 | 2277.0 | 2273.3 | 2268.3 | 2265.9 | 2263.4 | 2262.1 |
| 5° | 2295.6 | 2295.6 | 2299.4 | 2298.1 | 2294.4 | 2289.4 | 2286.9 | 2283.2 | 2279.5 | 2277.0 | 2278.3 |
| 7.5° | 2326.6 | 2327.9 | 2329.1 | 2327.9 | 2324.2 | 2320.4 | 2315.5 | 2314.2 | 2309.3 | 2305.6 | 2308.0 |
| 10° | 2373.8 | 2373.8 | 2375.0 | 2376.2 | 2373.8 | 2365.1 | 2365.1 | 2362.6 | 2357.6 | 2352.7 | 2353.9 |
| 12.5° | 2425.9 | 2425.9 | 2427.1 | 2427.1 | 2427.1 | 2422.1 | 2423.4 | 2422.1 | 2415.9 | 2413.5 | 2415.9 |
| 15° | 2476.7 | 2477.9 | 2477.9 | 2480.4 | 2480.4 | 2481.7 | 2486.6 | 2486.6 | 2484.1 | 2482.9 | 2482.9 |
| 17.5° | 2536.2 | 2538.7 | 2540.0 | 2543.7 | 2544.9 | 2547.4 | 2552.4 | 2553.6 | 2554.8 | 2551.1 | 2552.4 |
| 20° | 2615.6 | 2616.8 | 2620.6 | 2621.8 | 2626.8 | 2626.8 | 2629.2 | 2628.0 | 2625.5 | 2620.6 | 2620.6 |
| 22.5° | 2704.9 | 2707.4 | 2714.8 | 2714.8 | 2721.0 | 2717.3 | 2718.5 | 2714.8 | 2708.6 | 2706.1 | 2703.7 |
| 25° | 2821.5 | 2825.2 | 2831.4 | 2828.9 | 2831.4 | 2825.2 | 2825.2 | 2825.2 | 2821.5 | 2817.8 | 2816.5 |
| 27.5° | 2969.1 | 2962.9 | 2969.1 | 2964.1 | 2962.9 | 2957.9 | 2959.1 | 2956.7 | 2952.9 | 2951.7 | 2946.7 |
| 30° | 3122.9 | 3115.4 | 3119.1 | 3120.4 | 3117.9 | 3116.6 | 3111.7 | 3108.0 | 3101.8 | 3103.0 | 3099.3 |
| 32.5° | 3299.0 | 3291.5 | 3295.2 | 3296.5 | 3294.0 | 3296.5 | 3295.2 | 3286.6 | 3279.1 | 3284.1 | 3284.1 |
| 35° | 3508.6 | 3503.6 | 3513.5 | 3517.2 | 3509.8 | 3506.1 | 3501.1 | 3491.2 | 3480.0 | 3487.5 | 3488.7 |
| 37.5° | 3760.3 | 3754.1 | 3761.6 | 3771.5 | 3757.8 | 3750.4 | 3730.6 | 3715.7 | 3708.2 | 3712.0 | 3716.9 |
| 40° | 4022.0 | 4023.2 | 4044.3 | 4046.8 | 4031.9 | 4023.2 | 4003.4 | 3981.1 | 3960.0 | 3960.0 | 3966.2 |
| 42.5° | 4297.3 | 4301.1 | 4325.9 | 4334.5 | 4329.6 | 4313.5 | 4286.2 | 4258.9 | 4231.6 | 4236.6 | 4244.0 |
| 45° | 4608.6 | 4603.7 | 4629.7 | 4650.8 | 4647.1 | 4642.1 | 4616.1 | 4566.5 | 4541.7 | 4540.4 | 4552.8 |
| 47.5° | 4936.0 | 4946.0 | 4973.2 | 5009.2 | 5008.0 | 4995.6 | 4962.1 | 4916.2 | 4870.3 | 4874.0 | 4888.9 |
| 50° | 5318.0 | 5331.7 | 5377.6 | 5413.5 | 5418.5 | 5414.8 | 5375.1 | 5321.7 | 5257.3 | 5261.0 | 5280.8 |
| 52.5° | 5660.3 | 5680.2 | 5733.5 | 5807.9 | 5853.8 | 5874.9 | 5848.8 | 5799.2 | 5733.5 | 5737.2 | 5758.3 |
| 55° | 5970.4 | 6001.4 | 6080.8 | 6182.5 | 6274.2 | 6359.8 | 6398.2 | 6397.0 | 6348.6 | 6359.8 | 6387.1 |
| 57.5° | 6165.1 | 6208.5 | 6328.8 | 6492.5 | 6674.8 | 6847.2 | 6996.0 | 7136.2 | 7167.2 | 7225.5 | 7225.5 |
| 60° | 5903.4 | 6005.1 | 6165.1 | 6445.4 | 6803.8 | 7190.7 | 7609.9 | 8018.0 | 8280.9 | 8488.0 | 8376.4 |
| 62.5° | 4929.8 | 5079.9 | 5304.4 | 5674.0 | 6232.1 | 6922.9 | 7765.0 | 8713.7 | 9703.4 | 10308.6 | 9864.6 |
| 65° | 3189.8 | 3378.3 | 3622.7 | 4038.1 | 4741.3 | 5630.6 | 6857.1 | 8562.4 | 10633.6 | 11707.6 | 10715.4 |
| 67.5° | 1263.8 | 1391.5 | 1540.3 | 1835.5 | 2445.7 | 3318.8 | 4695.4 | 6798.8 | 9389.6 | 10402.9 | 9290.4 |
| 70° | 604.0 | 625.1 | 653.6 | 716.8 | 869.4 | 1173.2 | 1886.4 | 3349.8 | 5758.3 | 6826.1 | 5620.6 |
| 72.5° | 436.6 | 440.3 | 453.9 | 475.0 | 519.6 | 581.7 | 706.9 | 1024.4 | 1985.6 | 2887.2 | 1988.1 |
| 75° | 331.1 | 336.1 | 343.5 | 354.7 | 378.3 | 408.0 | 455.2 | 545.7 | 679.6 | 783.8 | 678.4 |
| 77.5° | 251.8 | 256.7 | 262.9 | 274.1 | 286.5 | 307.6 | 324.9 | 360.9 | 418.0 | 440.3 | 437.8 |
| 80° | 183.6 | 192.2 | 202.2 | 212.1 | 220.8 | 230.7 | 231.9 | 249.3 | 281.5 | 302.6 | 296.4 |
| 82.5° | 116.6 | 124.0 | 150.1 | 161.2 | 162.5 | 164.9 | 163.7 | 164.9 | 182.3 | 197.2 | 192.2 |
| 85° | 74.4 | 79.4 | 93.0 | 105.4 | 102.9 | 107.9 | 107.9 | 105.4 | 98.0 | 84.3 | 100.5 |
| 87.5° | 37.2 | 38.4 | 44.6 | 55.8 | 53.3 | 47.1 | 45.9 | 45.9 | 33.5 | 28.5 | 31.0 |
| 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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CATALOG NUMBER: NAV-AF-06-D-UNV-5NQ-8030-600

CANDELA DISTRIBUTION (continued):

| | 55° | 60° | 65° | 70° | 75° | 80° | 85° | 90° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 2264.6 | 2264.6 | 2264.6 | 2264.6 | 2264.6 | 2264.6 | 2264.6 | 2264.6 |
| 2.5° | 2258.4 | 2260.9 | 2257.2 | 2257.2 | 2255.9 | 2258.4 | 2254.7 | 2254.7 |
| 5° | 2275.8 | 2279.5 | 2278.3 | 2278.3 | 2280.7 | 2283.2 | 2282.0 | 2280.7 |
| 7.5° | 2306.8 | 2309.3 | 2311.8 | 2313.0 | 2315.5 | 2314.2 | 2316.7 | 2315.5 |
| 10° | 2353.9 | 2351.4 | 2355.2 | 2351.4 | 2352.7 | 2350.2 | 2351.4 | 2351.4 |
| 12.5° | 2413.5 | 2409.7 | 2407.2 | 2404.8 | 2404.8 | 2399.8 | 2399.8 | 2401.0 |
| 15° | 2481.7 | 2475.5 | 2470.5 | 2468.0 | 2465.5 | 2465.5 | 2461.8 | 2464.3 |
| 17.5° | 2548.6 | 2542.4 | 2533.8 | 2533.8 | 2530.0 | 2527.5 | 2525.1 | 2531.3 |
| 20° | 2619.3 | 2613.1 | 2608.2 | 2606.9 | 2599.5 | 2597.0 | 2598.2 | 2605.7 |
| 22.5° | 2701.2 | 2697.5 | 2697.5 | 2695.0 | 2690.0 | 2686.3 | 2686.3 | 2695.0 |
| 25° | 2811.6 | 2804.1 | 2805.4 | 2806.6 | 2804.1 | 2804.1 | 2801.6 | 2807.8 |
| 27.5° | 2946.7 | 2940.5 | 2944.3 | 2946.7 | 2944.3 | 2948.0 | 2944.3 | 2949.2 |
| 30° | 3105.5 | 3101.8 | 3105.5 | 3109.2 | 3103.0 | 3103.0 | 3100.5 | 3104.2 |
| 32.5° | 3295.2 | 3290.3 | 3292.8 | 3292.8 | 3284.1 | 3276.6 | 3266.7 | 3274.2 |
| 35° | 3503.6 | 3497.4 | 3502.4 | 3506.1 | 3496.2 | 3488.7 | 3473.8 | 3480.0 |
| 37.5° | 3733.0 | 3735.5 | 3741.7 | 3757.8 | 3755.4 | 3743.0 | 3731.8 | 3736.8 |
| 40° | 3989.8 | 4002.2 | 4029.4 | 4040.6 | 4038.1 | 4025.7 | 4010.8 | 4013.3 |
| 42.5° | 4280.0 | 4296.1 | 4324.6 | 4343.2 | 4334.5 | 4317.2 | 4298.6 | 4306.0 |
| 45° | 4596.2 | 4621.0 | 4658.2 | 4676.8 | 4665.7 | 4647.1 | 4621.0 | 4634.7 |
| 47.5° | 4931.1 | 4980.7 | 5030.3 | 5055.1 | 5051.4 | 5025.3 | 4991.8 | 4995.6 |
| 50° | 5331.7 | 5397.4 | 5460.6 | 5485.5 | 5466.8 | 5427.2 | 5380.0 | 5378.8 |
| 52.5° | 5830.2 | 5900.9 | 5953.0 | 5946.8 | 5900.9 | 5838.9 | 5785.6 | 5783.1 |
| 55° | 6452.8 | 6476.4 | 6468.9 | 6415.6 | 6335.0 | 6238.3 | 6170.0 | 6158.9 |
| 57.5° | 7205.6 | 7126.3 | 7009.7 | 6848.4 | 6667.4 | 6483.8 | 6359.8 | 6313.9 |
| 60° | 8125.9 | 7767.4 | 7350.7 | 6911.7 | 6511.1 | 6211.0 | 6021.2 | 5905.9 |
| 62.5° | 8886.1 | 7848.1 | 6916.7 | 6153.9 | 5530.1 | 5159.3 | 4900.1 | 4740.1 |
| 65° | 8625.7 | 6780.2 | 5430.9 | 4447.4 | 3766.5 | 3383.3 | 3109.2 | 2926.9 |
| 67.5° | 6663.7 | 4530.5 | 3152.6 | 2185.3 | 1656.9 | 1402.7 | 1225.3 | 1110.0 |
| 70° | 3359.7 | 1737.5 | 1052.9 | 742.9 | 635.0 | 590.3 | 560.6 | 543.2 |
| 72.5° | 986.0 | 658.6 | 546.9 | 483.7 | 445.2 | 418.0 | 400.6 | 391.9 |
| 75° | 545.7 | 445.2 | 393.1 | 357.2 | 332.4 | 313.8 | 302.6 | 295.2 |
| 77.5° | 375.8 | 323.7 | 297.7 | 274.1 | 254.2 | 240.6 | 231.9 | 224.5 |
| 80° | 262.9 | 236.9 | 225.7 | 213.3 | 198.4 | 187.3 | 174.9 | 169.9 |
| 82.5° | 174.9 | 163.7 | 161.2 | 151.3 | 142.6 | 130.2 | 107.9 | 100.5 |
| 85° | 102.9 | 101.7 | 101.7 | 98.0 | 91.8 | 80.6 | 64.5 | 64.5 |
| 87.5° | 36.0 | 37.2 | 38.4 | 40.9 | 39.7 | 33.5 | 27.3 | 26.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)