

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: P196570

Luminaire Tested: **NAV-AF-04-D-UNV-SL2-7030-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196570
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24257)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-04-D-UNV-SL2-7030-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 70 CRI, 3000K, 800mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II SPILL
LIGHT ELIMINATOR OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 18689.9 lumens
Efficiency: N/A
Efficacy: 109.3 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type II - Medium - Semi-Cutoff
BUG Rating: B3 - U0 - G3

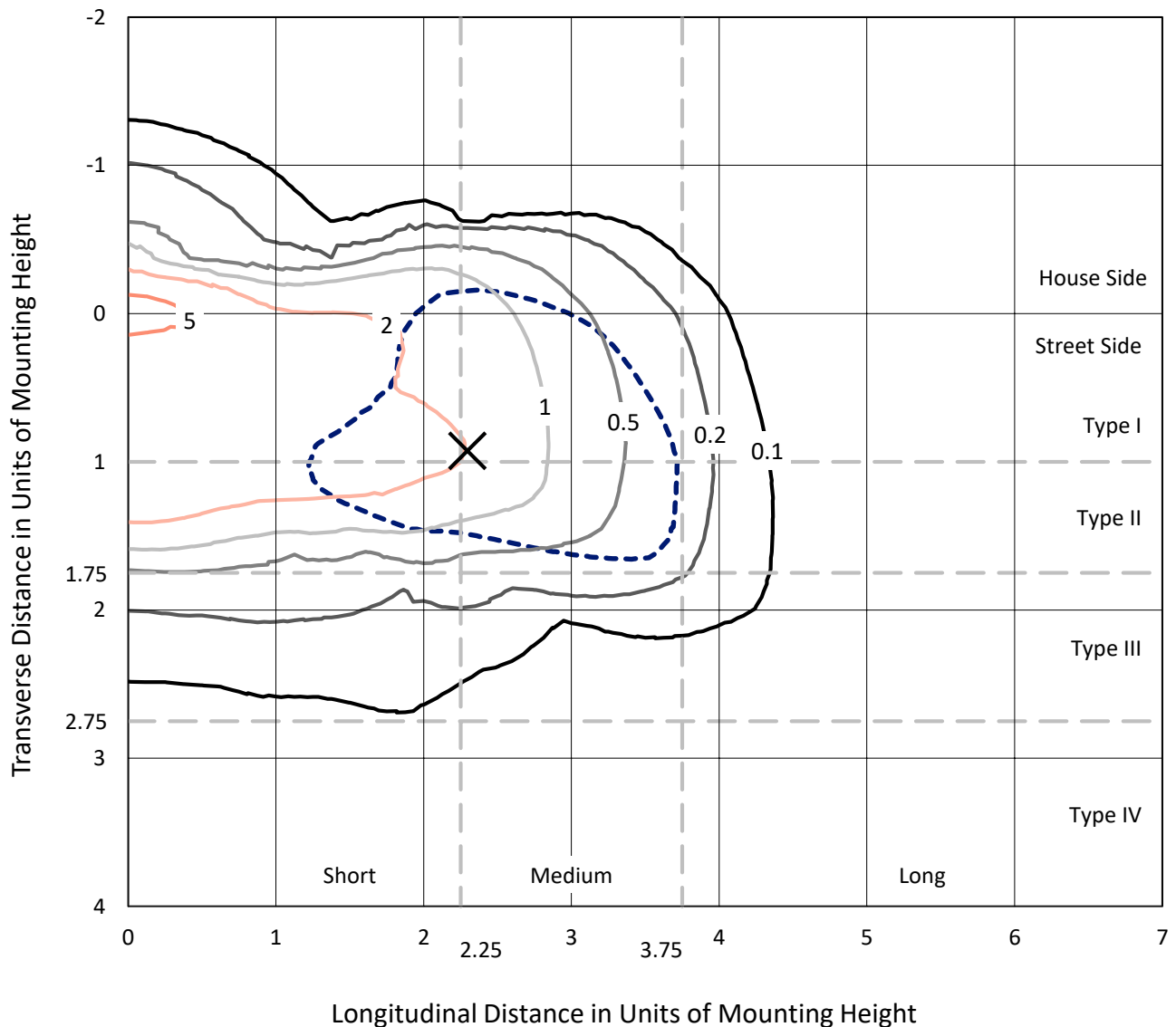
Input Watts (W): 171
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



REPORT NUMBER: P196570
 CATALOG NUMBER: NAV-AF-04-D-UNV-SL2-7030-800

Iso-Footcandle Lines of Horizontal Illumination

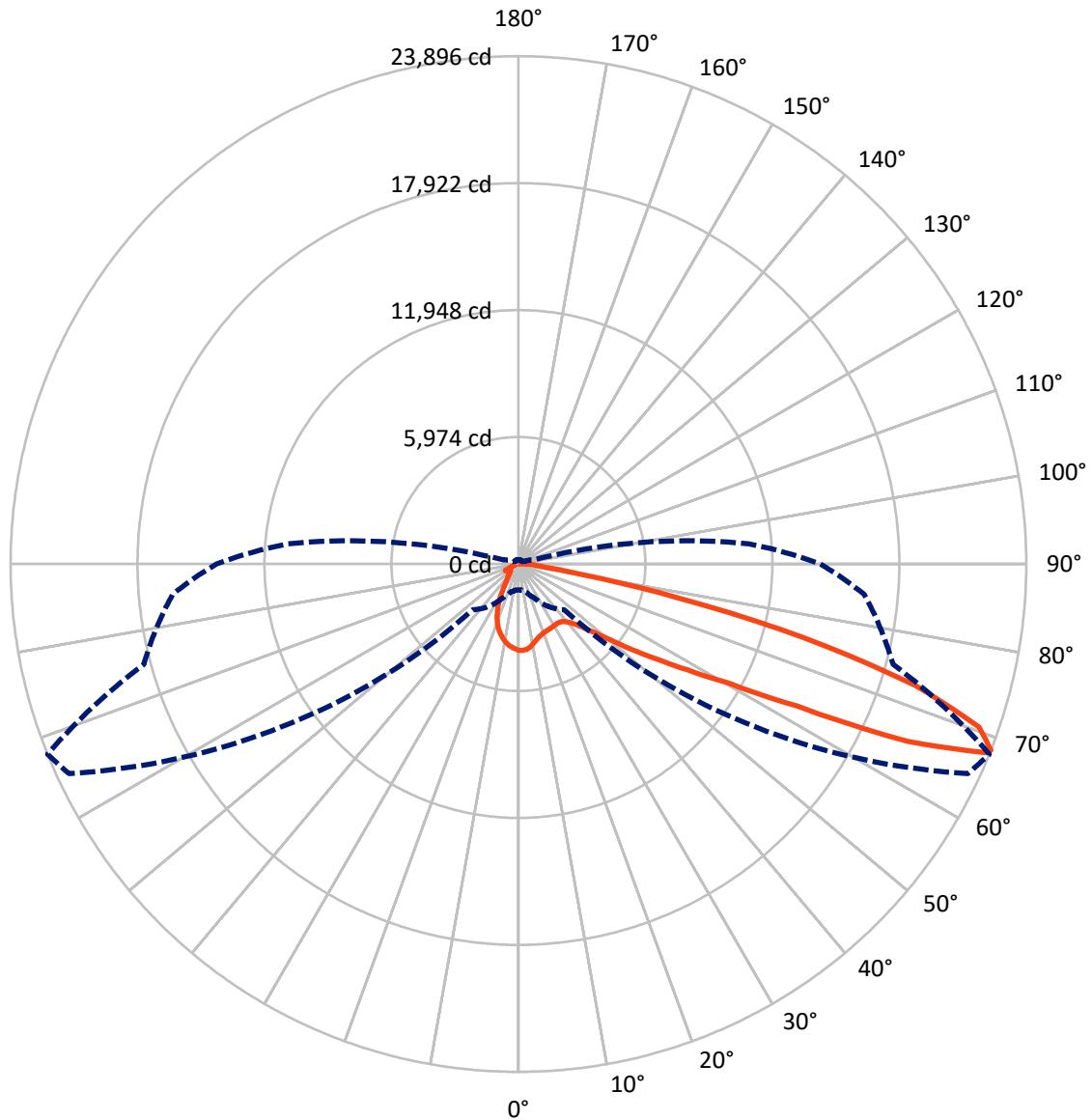
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 6.5 fc
 Type II - Medium - Semi-Cutoff

REPORT NUMBER: P196570
CATALOG NUMBER: NAV-AF-04-D-UNV-SL2-7030-800

Luminous Intensity Polar Plot



— Vertical Plane Through 68-Deg Lateral - - - Horizontal Cone Through 68-Deg Vertical

REPORT NUMBER: P196570

CATALOG NUMBER: NAV-AF-04-D-UNV-SL2-7030-800

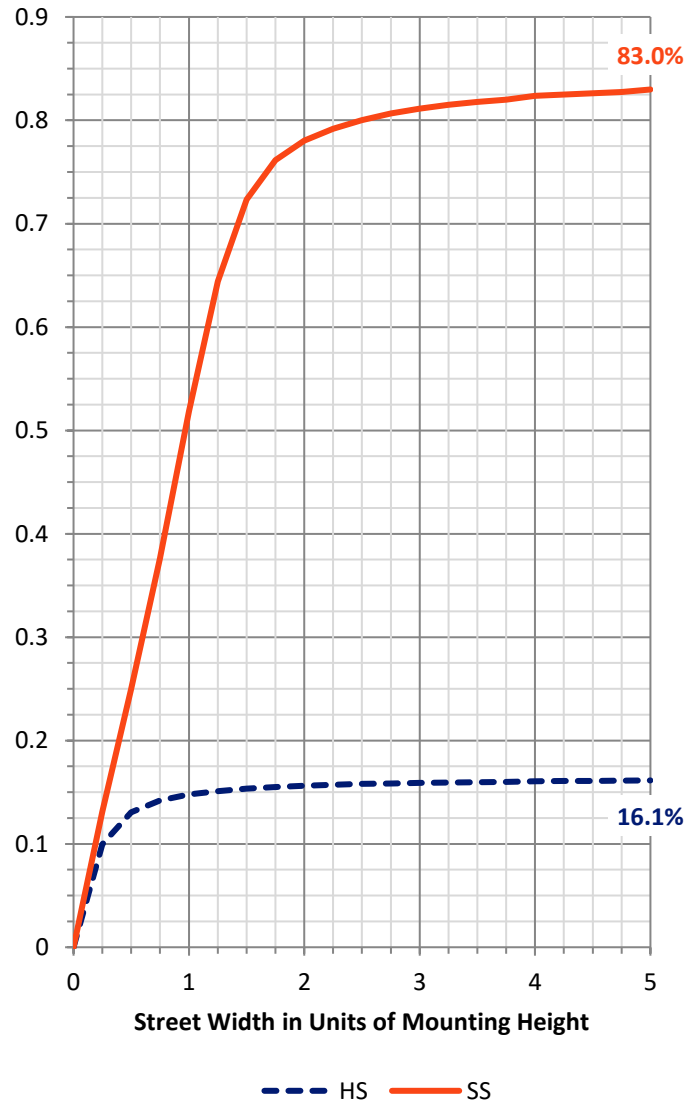
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 3057.7 | 0.0 | 3057.7 |
| | % Fixture | 16.4 | 0.0 | 16.4 |
| Street Side | Lumens | 15632.2 | 0.0 | 15632.2 |
| | % Fixture | 83.6 | 0.0 | 83.6 |
| Total | Lumens | 18689.9 | 0.0 | 18689.9 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 348.4 | 1.9 |
| 10°-20° | 808.2 | 4.3 |
| 20°-30° | 1093.0 | 5.8 |
| 30°-40° | 1541.1 | 8.2 |
| 40°-50° | 2534.2 | 13.6 |
| 50°-60° | 3928.3 | 21.0 |
| 60°-70° | 5093.3 | 27.3 |
| 70°-80° | 2922.8 | 15.6 |
| 80°-90° | 420.5 | 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° | 18689.9 | 100.0 |
| 0°-180° | 18689.9 | 100.0 |



REPORT NUMBER: P196570

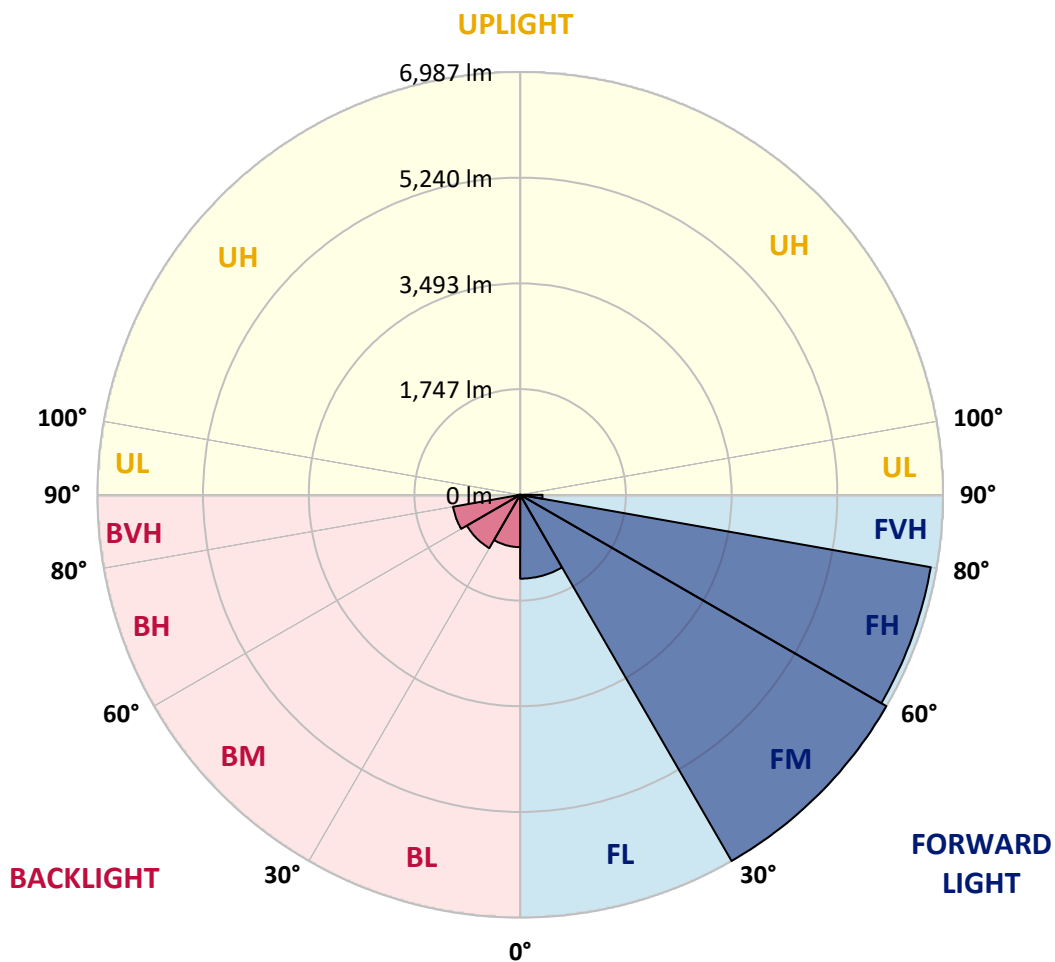
CATALOG NUMBER: NAV-AF-04-D-UNV-SL2-7030-800

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|--------|-----------|-------------------------|------|---------|
| | | | | B | U | G |
| FL | (0°-30°) | 1385.2 | 7.4 | | | |
| FM | (30°-60°) | 6986.6 | 37.4 | | | |
| FH | (60°-80°) | 6889.9 | 36.9 | | | G3/7500 |
| FVH | (80°-90°) | 370.4 | 2.0 | | | G3/500 |
| BL | (0°-30°) | 864.4 | 4.6 | B2/1000 | | |
| BM | (30°-60°) | 1017.0 | 5.4 | B2/2500 | | |
| BH | (60°-80°) | 1126.1 | 6.0 | B3/2500 | | G3/2500 |
| BVH | (80°-90°) | 50.1 | 0.3 | | | G1/100 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B3-U0-G3

Type II Medium





REPORT NUMBER: P196570

CATALOG NUMBER: NAV-AF-04-D-UNV-SL2-7030-800

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 68° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|
| 0° | 4066.7 | 4066.7 | 4066.7 | 4066.7 | 4066.7 | 4066.7 | 4066.7 | 4066.7 | 4066.7 | 4066.7 | 4066.7 |
| 2.5° | 3958.1 | 3989.8 | 3989.8 | 4013.0 | 4033.8 | 4050.9 | 4065.5 | 4065.5 | 4065.5 | 4055.8 | 4047.2 |
| 5° | 3541.7 | 3584.5 | 3590.6 | 3649.3 | 3726.2 | 3820.1 | 3925.1 | 4017.9 | 4036.2 | 4070.5 | 4083.9 |
| 7.5° | 3252.4 | 3265.9 | 3289.0 | 3329.3 | 3407.5 | 3523.5 | 3688.3 | 3895.8 | 3945.9 | 4053.3 | 4109.5 |
| 10° | 3047.3 | 3058.2 | 3077.9 | 3118.2 | 3189.0 | 3293.9 | 3456.3 | 3726.2 | 3809.1 | 3999.7 | 4110.7 |
| 12.5° | 2897.1 | 2905.8 | 2924.0 | 2960.6 | 3032.7 | 3126.7 | 3292.7 | 3573.6 | 3676.0 | 3945.9 | 4127.9 |
| 15° | 2780.0 | 2794.7 | 2809.3 | 2844.7 | 2917.9 | 3008.2 | 3176.7 | 3462.4 | 3573.6 | 3903.2 | 4159.5 |
| 17.5° | 2733.5 | 2740.9 | 2743.3 | 2761.6 | 2827.5 | 2919.1 | 3087.5 | 3384.3 | 3499.0 | 3869.0 | 4184.0 |
| 20° | 2762.8 | 2764.0 | 2739.6 | 2727.4 | 2765.3 | 2849.5 | 3013.2 | 3325.7 | 3442.9 | 3838.5 | 4193.7 |
| 22.5° | 2891.0 | 2891.0 | 2827.5 | 2773.9 | 2748.2 | 2800.8 | 2963.1 | 3285.4 | 3412.3 | 3815.3 | 4193.7 |
| 25° | 3135.2 | 3124.3 | 3025.4 | 2919.1 | 2805.6 | 2783.6 | 2931.3 | 3259.7 | 3389.1 | 3803.1 | 4177.8 |
| 27.5° | 3456.3 | 3446.6 | 3320.8 | 3163.3 | 2958.2 | 2820.2 | 2920.4 | 3239.0 | 3366.0 | 3784.7 | 4143.6 |
| 30° | 3847.0 | 3838.5 | 3695.5 | 3489.3 | 3186.5 | 2936.3 | 2945.9 | 3224.3 | 3347.7 | 3754.2 | 4086.3 |
| 32.5° | 4236.4 | 4231.6 | 4118.0 | 3906.8 | 3501.4 | 3132.8 | 3013.2 | 3221.9 | 3337.9 | 3717.5 | 4016.7 |
| 35° | 4628.3 | 4628.3 | 4558.8 | 4380.5 | 3925.1 | 3428.2 | 3153.5 | 3267.1 | 3356.2 | 3698.1 | 3956.9 |
| 37.5° | 5207.1 | 5183.8 | 5054.5 | 4870.1 | 4458.7 | 3811.6 | 3380.6 | 3362.4 | 3427.0 | 3730.9 | 3937.3 |
| 40° | 6103.2 | 6036.0 | 5712.5 | 5402.5 | 5041.0 | 4302.4 | 3712.7 | 3546.7 | 3585.8 | 3843.3 | 3983.7 |
| 42.5° | 7040.7 | 6934.5 | 6506.1 | 6010.4 | 5642.9 | 4907.9 | 4148.6 | 3845.8 | 3844.5 | 4060.6 | 4131.4 |
| 45° | 7845.4 | 7790.4 | 7326.5 | 6697.7 | 6330.3 | 5589.1 | 4699.1 | 4290.2 | 4246.3 | 4397.5 | 4415.9 |
| 47.5° | 8313.0 | 8276.4 | 7996.8 | 7425.4 | 7145.8 | 6393.8 | 5397.5 | 4906.8 | 4823.7 | 4914.1 | 4886.0 |
| 50° | 8183.5 | 8218.9 | 8138.4 | 7846.6 | 8022.4 | 7524.2 | 6287.6 | 5751.5 | 5594.1 | 5684.4 | 5616.0 |
| 52.5° | 7502.3 | 7597.6 | 7669.6 | 7725.7 | 8526.6 | 9037.0 | 7405.8 | 6806.5 | 6675.7 | 6659.9 | 6594.1 |
| 55° | 6275.3 | 6426.7 | 6653.8 | 7066.5 | 8391.1 | 10251.7 | 9359.2 | 8082.2 | 7891.8 | 7791.6 | 7817.3 |
| 57.5° | 4270.6 | 4500.2 | 4989.8 | 5774.8 | 7686.7 | 10769.3 | 12247.9 | 9730.4 | 9408.1 | 9051.6 | 9134.6 |
| 60° | 2352.7 | 2544.3 | 3126.7 | 3917.8 | 6078.7 | 10692.4 | 14808.0 | 12409.0 | 11394.4 | 10449.5 | 10620.4 |
| 62.5° | 1522.4 | 1563.9 | 1997.4 | 2676.2 | 3730.9 | 9439.9 | 16230.4 | 16886.0 | 14736.1 | 12293.1 | 12533.5 |
| 65° | 1223.3 | 1252.6 | 1465.0 | 2158.5 | 2599.3 | 6072.6 | 16293.9 | 21530.2 | 20112.8 | 14798.3 | 14805.6 |
| 67.5° | 1195.3 | 1208.6 | 1332.0 | 1815.5 | 2438.1 | 3306.1 | 14084.1 | 23361.6 | 23689.9 | 17755.2 | 16325.6 |
| 68° | 1212.3 | 1228.2 | 1352.7 | 1759.3 | 2436.9 | 3047.3 | 13017.0 | 23333.5 | 23896.3 | 18249.7 | 16325.6 |
| 70° | 1069.5 | 1089.0 | 1379.6 | 1820.4 | 2333.1 | 2620.0 | 8913.7 | 22094.3 | 23000.1 | 19386.4 | 15490.6 |
| 72.5° | 559.2 | 543.3 | 682.5 | 1437.0 | 2626.1 | 2729.9 | 4709.0 | 18458.5 | 19515.8 | 17954.2 | 13383.2 |
| 75° | 435.8 | 396.8 | 382.2 | 567.7 | 2310.0 | 2831.2 | 2734.8 | 13119.7 | 13918.0 | 12942.6 | 8945.4 |
| 77.5° | 410.3 | 362.6 | 334.6 | 335.8 | 1016.9 | 2945.9 | 2212.3 | 7720.8 | 7720.8 | 6174.0 | 2854.4 |
| 80° | 329.6 | 285.7 | 267.3 | 305.3 | 490.8 | 2715.2 | 2308.6 | 3518.5 | 3001.0 | 1595.7 | 786.2 |
| 82.5° | 217.3 | 194.2 | 195.3 | 247.8 | 372.3 | 1813.0 | 2673.7 | 1737.3 | 1305.1 | 706.9 | 462.7 |
| 85° | 138.0 | 118.4 | 131.8 | 173.4 | 278.4 | 808.2 | 2647.0 | 1207.5 | 864.4 | 396.8 | 230.7 |
| 87.5° | 69.6 | 53.7 | 65.9 | 90.3 | 169.7 | 231.9 | 2179.2 | 1078.1 | 641.0 | 164.9 | 125.7 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



REPORT NUMBER: P196570

CATALOG NUMBER: NAV-AF-04-D-UNV-SL2-7030-800

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|---------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 4066.7 | 4066.7 | 4066.7 | 4066.7 | 4066.7 | 4066.7 | 4066.7 | 4066.7 | 4066.7 | 4066.7 | 4066.7 |
| 2.5° | 4047.2 | 4020.4 | 4007.0 | 3984.9 | 3958.1 | 3931.2 | 3912.9 | 3904.4 | 3899.5 | 3901.9 | 3900.7 |
| 5° | 4076.6 | 4041.1 | 3983.7 | 3901.9 | 3817.7 | 3728.6 | 3660.1 | 3607.7 | 3574.8 | 3565.0 | 3562.5 |
| 7.5° | 4098.6 | 4047.2 | 3939.8 | 3790.9 | 3646.7 | 3490.5 | 3357.4 | 3251.2 | 3179.2 | 3146.2 | 3145.0 |
| 10° | 4094.8 | 4028.9 | 3859.2 | 3639.4 | 3428.2 | 3198.7 | 2990.0 | 2811.7 | 2682.4 | 2620.0 | 2617.6 |
| 12.5° | 4098.6 | 4008.1 | 3760.2 | 3462.4 | 3159.7 | 2831.2 | 2521.1 | 2243.9 | 2051.2 | 1959.6 | 1955.8 |
| 15° | 4113.2 | 3986.3 | 3659.0 | 3264.6 | 2845.8 | 2382.0 | 1938.8 | 1590.9 | 1415.0 | 1355.2 | 1355.2 |
| 17.5° | 4112.0 | 3949.5 | 3541.7 | 3035.1 | 2473.5 | 1852.1 | 1323.4 | 1108.6 | 1091.5 | 1146.4 | 1155.0 |
| 20° | 4087.5 | 3890.9 | 3390.5 | 2762.8 | 2036.5 | 1281.9 | 897.3 | 866.9 | 1003.5 | 1155.0 | 1172.1 |
| 22.5° | 4049.7 | 3815.3 | 3215.8 | 2446.7 | 1527.3 | 835.1 | 692.2 | 738.6 | 924.3 | 1112.3 | 1139.0 |
| 25° | 3997.1 | 3723.7 | 3015.5 | 2079.2 | 1015.8 | 600.7 | 577.4 | 634.9 | 765.5 | 891.2 | 910.7 |
| 27.5° | 3920.2 | 3607.7 | 2797.0 | 1681.2 | 648.2 | 494.5 | 503.0 | 543.3 | 599.5 | 653.2 | 664.2 |
| 30° | 3823.7 | 3472.2 | 2559.0 | 1240.4 | 492.0 | 442.0 | 456.6 | 481.1 | 505.5 | 539.6 | 547.0 |
| 32.5° | 3726.2 | 3334.3 | 2311.2 | 852.2 | 429.7 | 413.9 | 428.6 | 442.0 | 462.7 | 485.8 | 490.8 |
| 35° | 3638.3 | 3206.0 | 2055.9 | 594.6 | 402.8 | 395.5 | 402.8 | 411.5 | 432.2 | 455.4 | 457.8 |
| 37.5° | 3574.8 | 3101.0 | 1789.7 | 470.1 | 387.0 | 379.6 | 383.4 | 387.0 | 411.5 | 445.7 | 449.3 |
| 40° | 3566.2 | 3031.4 | 1520.1 | 422.4 | 374.8 | 365.0 | 362.6 | 365.0 | 396.8 | 435.8 | 439.6 |
| 42.5° | 3649.3 | 3035.1 | 1256.3 | 402.8 | 365.0 | 354.1 | 344.2 | 349.2 | 377.3 | 407.7 | 410.3 |
| 45° | 3845.8 | 3120.6 | 1028.0 | 394.3 | 356.5 | 348.0 | 333.3 | 335.8 | 349.2 | 365.0 | 367.4 |
| 47.5° | 4192.5 | 3307.4 | 853.5 | 389.5 | 349.2 | 341.9 | 323.5 | 316.2 | 317.4 | 326.0 | 326.0 |
| 50° | 4746.8 | 3619.9 | 747.3 | 384.6 | 343.1 | 329.6 | 308.8 | 294.2 | 290.5 | 295.4 | 296.6 |
| 52.5° | 5573.4 | 4155.9 | 695.9 | 374.8 | 332.0 | 313.8 | 290.5 | 275.9 | 269.8 | 274.7 | 274.7 |
| 55° | 6690.4 | 5011.7 | 671.5 | 361.4 | 318.6 | 294.2 | 273.4 | 261.2 | 256.4 | 260.0 | 260.0 |
| 57.5° | 7963.8 | 6124.0 | 713.0 | 343.1 | 301.5 | 273.4 | 258.8 | 250.3 | 246.6 | 250.3 | 251.6 |
| 60° | 9476.5 | 7579.2 | 998.6 | 319.9 | 283.2 | 255.1 | 246.6 | 241.7 | 239.3 | 243.0 | 243.0 |
| 62.5° | 11487.3 | 9515.5 | 1545.6 | 301.5 | 263.8 | 238.0 | 235.7 | 233.2 | 230.7 | 234.4 | 234.4 |
| 65° | 13658.0 | 11277.3 | 1590.9 | 290.5 | 246.6 | 223.4 | 224.6 | 224.6 | 222.3 | 225.8 | 225.8 |
| 67.5° | 14349.0 | 11124.7 | 888.9 | 277.2 | 225.8 | 208.8 | 213.6 | 213.6 | 212.4 | 216.2 | 214.9 |
| 68° | 14202.5 | 10882.9 | 774.0 | 273.4 | 222.3 | 205.1 | 210.0 | 211.2 | 210.0 | 213.6 | 212.4 |
| 70° | 13111.0 | 9554.6 | 509.1 | 252.7 | 206.3 | 193.0 | 200.3 | 201.5 | 200.3 | 205.1 | 203.9 |
| 72.5° | 10823.1 | 7166.6 | 376.1 | 221.0 | 186.9 | 177.0 | 184.3 | 185.5 | 186.9 | 191.6 | 190.4 |
| 75° | 6873.6 | 3958.1 | 296.6 | 188.0 | 167.2 | 158.8 | 166.1 | 169.7 | 172.2 | 179.5 | 175.8 |
| 77.5° | 1882.6 | 1201.3 | 240.5 | 159.9 | 144.1 | 140.4 | 145.4 | 150.1 | 152.6 | 161.1 | 155.0 |
| 80° | 659.3 | 531.1 | 200.3 | 135.5 | 119.6 | 118.4 | 123.4 | 128.2 | 130.7 | 138.0 | 130.7 |
| 82.5° | 400.4 | 346.7 | 159.9 | 106.2 | 94.0 | 92.8 | 98.9 | 103.8 | 106.2 | 106.2 | 101.3 |
| 85° | 208.8 | 183.1 | 117.2 | 74.6 | 64.7 | 61.0 | 72.0 | 78.1 | 79.3 | 78.1 | 74.6 |
| 87.5° | 117.2 | 103.8 | 62.3 | 35.4 | 29.3 | 30.5 | 37.8 | 46.4 | 50.0 | 48.8 | 46.4 |
| 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)