

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: P195674

Luminaire Tested: **NAV-AF-02-D-UNV-SL4-7050-600-HSS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195674
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24285)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-02-D-UNV-SL4-7050-600-HSS
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 5000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV SPILL
LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6538 lumens
Efficiency: N/A
Efficacy: 99.1 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B1 - U0 - G2

Input Watts (W): 66
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

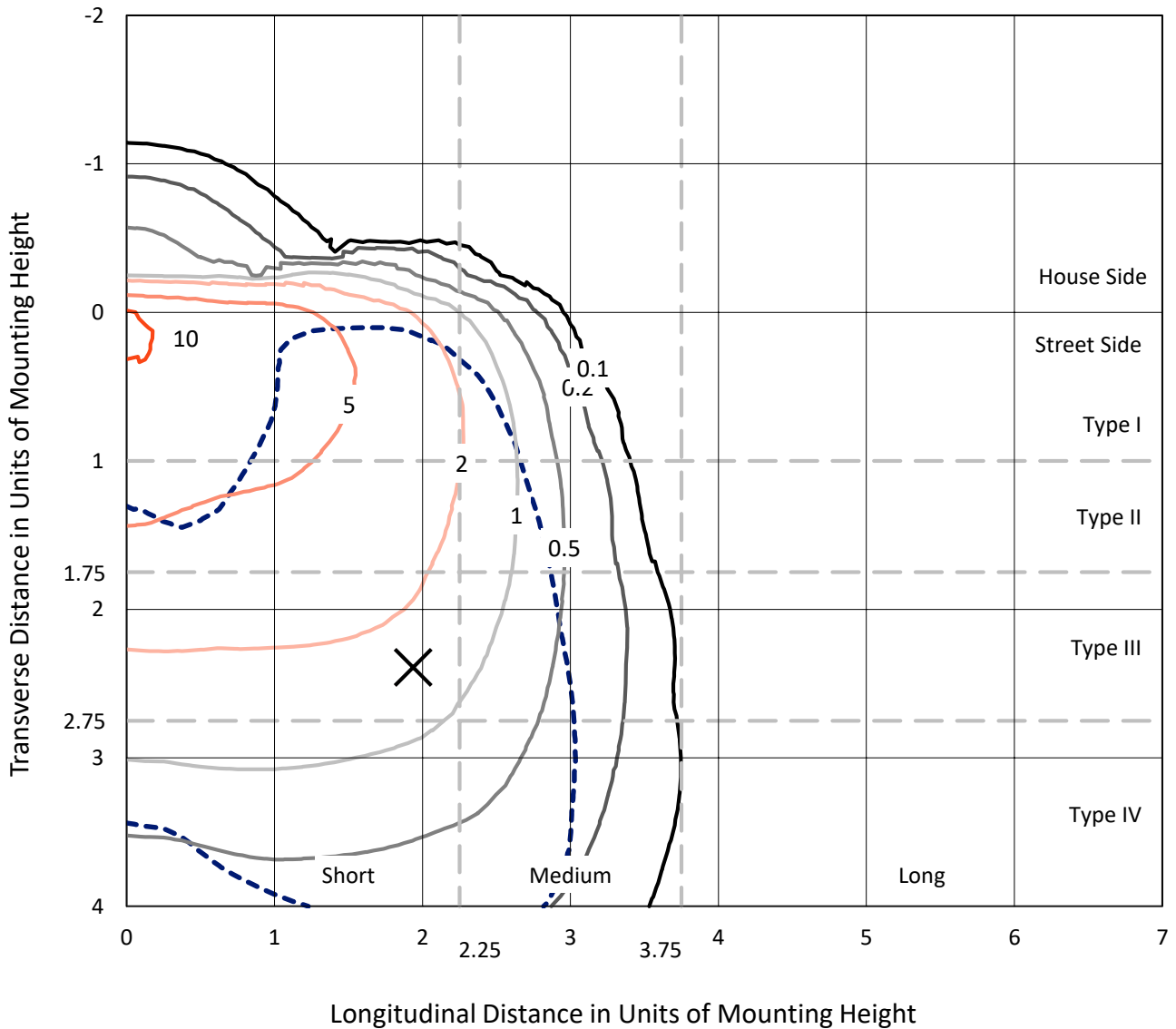


REPORT NUMBER: P195674

CATALOG NUMBER: NAV-AF-02-D-UNV-SL4-7050-600-HSS

Iso-Footcandle Lines of Horizontal Illumination

× Max cd
 - - - 1/2 Max cd

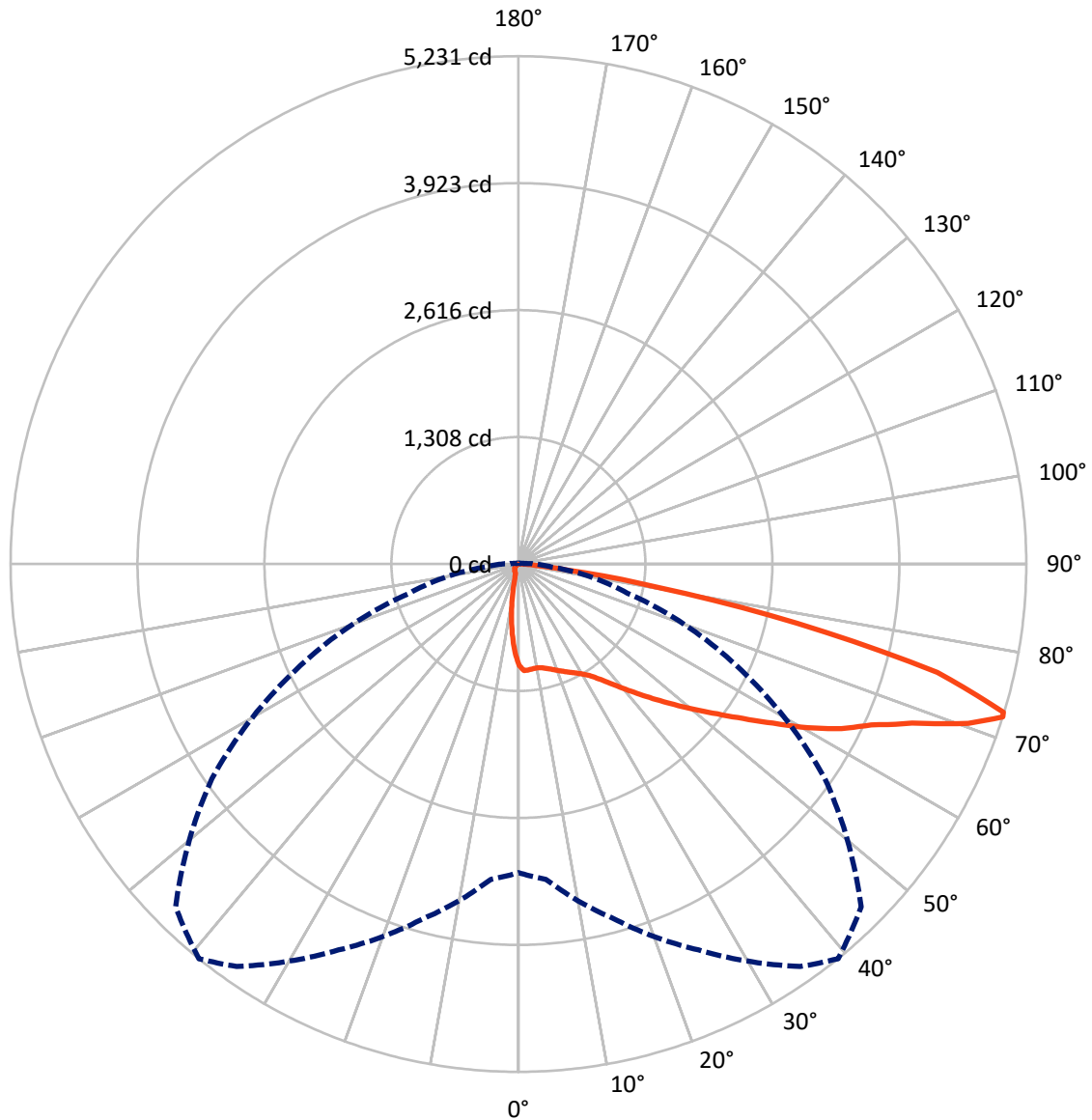


Based on 10 foot mounting height. Maximum calculated value = 11 fc
 Type IV - Short - Non-Cutoff

REPORT NUMBER: P195674

CATALOG NUMBER: NAV-AF-02-D-UNV-SL4-7050-600-HSS

Luminous Intensity Polar Plot



— Vertical Plane Through 39-Deg Lateral - - - Horizontal Cone Through 72-Deg Vertical

REPORT NUMBER: P195674

CATALOG NUMBER: NAV-AF-02-D-UNV-SL4-7050-600-HSS

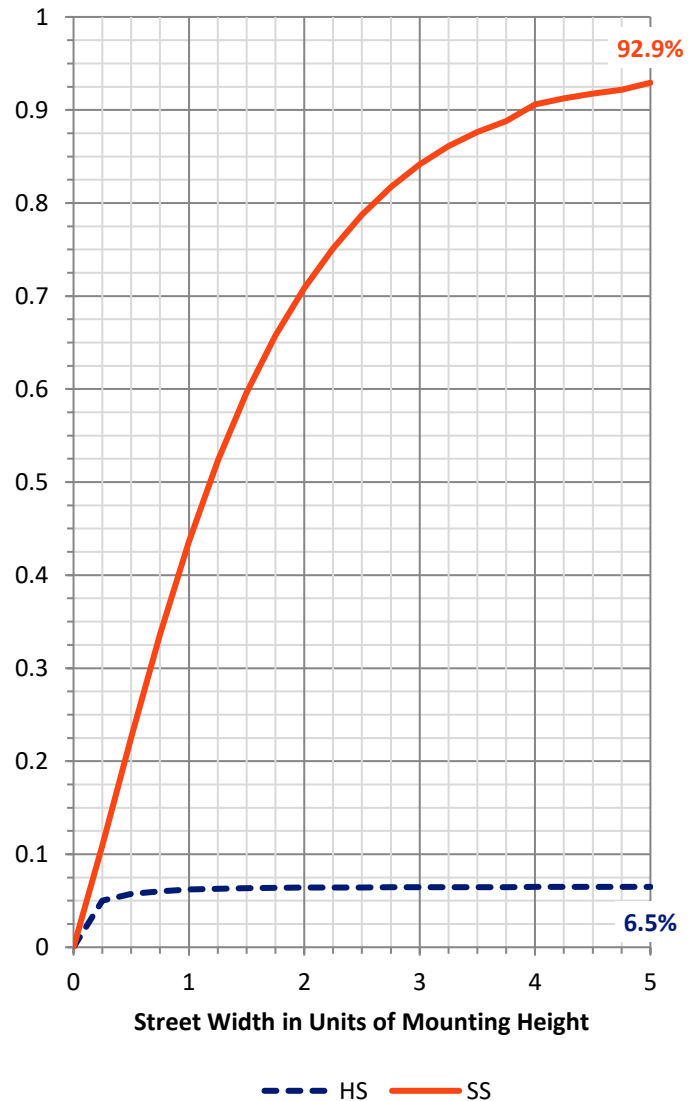
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 428.5 | 0.0 | 428.5 |
| | % Fixture | 6.6 | 0.0 | 6.6 |
| Street Side | Lumens | 6109.5 | 0.0 | 6109.5 |
| | % Fixture | 93.4 | 0.0 | 93.4 |
| Total | Lumens | 6538.0 | 0.0 | 6538.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 85.1 | 1.3 |
| 10°-20° | 206.1 | 3.2 |
| 20°-30° | 342.2 | 5.2 |
| 30°-40° | 545.5 | 8.3 |
| 40°-50° | 900.3 | 13.8 |
| 50°-60° | 1359.7 | 20.8 |
| 60°-70° | 1771.2 | 27.1 |
| 70°-80° | 1196.8 | 18.3 |
| 80°-90° | 131.1 | 2.0 |
| 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° | 6538.0 | 100.0 |
| 0°-180° | 6538.0 | 100.0 |

Coefficient of Utilization



REPORT NUMBER: P195674

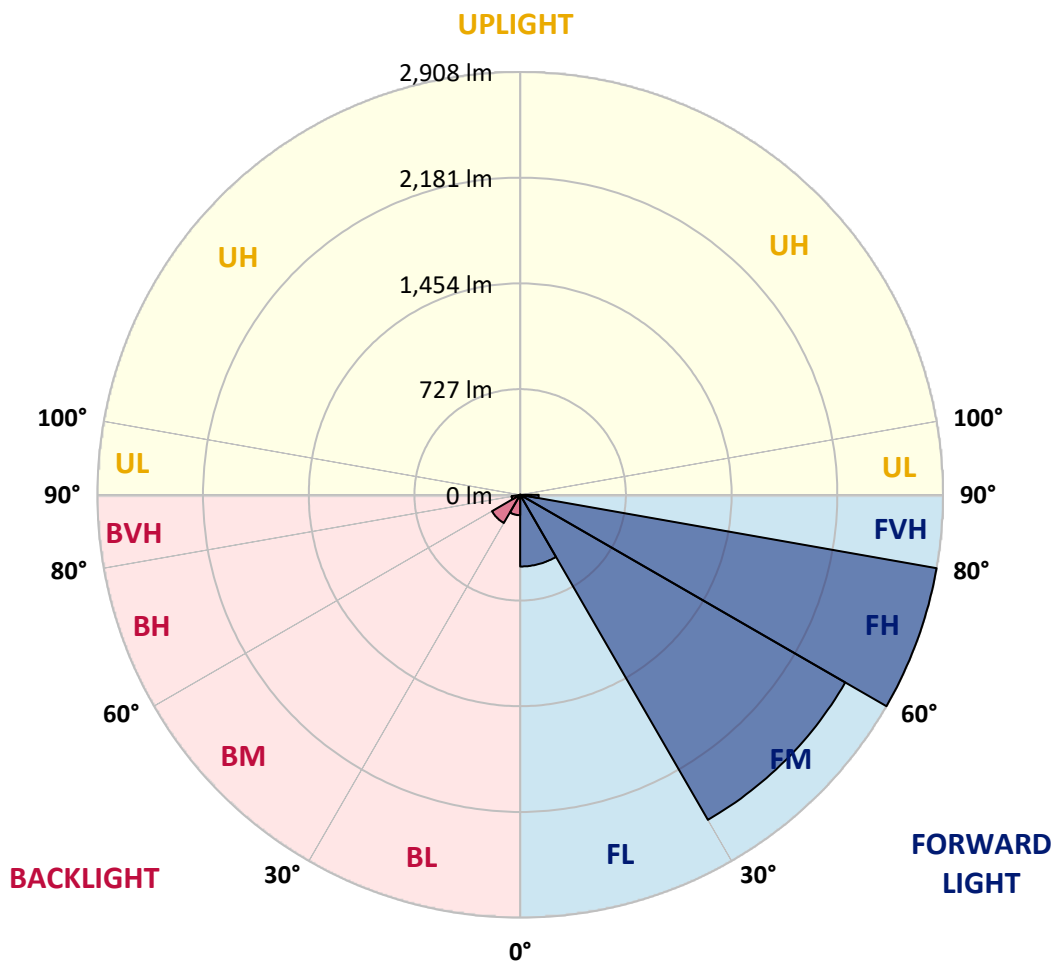
CATALOG NUMBER: NAV-AF-02-D-UNV-SL4-7050-600-HSS

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|--------|-----------|-------------------------|------|---------|
| | | | | B | U | G |
| FL | (0°-30°) | 493.1 | 7.5 | | | |
| FM | (30°-60°) | 2581.3 | 39.5 | | | |
| FH | (60°-80°) | 2907.8 | 44.5 | | | G2/5000 |
| FVH | (80°-90°) | 127.3 | 1.9 | | | G2/225 |
| BL | (0°-30°) | 140.3 | 2.1 | B1/500 | | |
| BM | (30°-60°) | 224.2 | 3.4 | B1/1000 | | |
| BH | (60°-80°) | 60.2 | 0.9 | B0/110 | | G0/110 |
| BVH | (80°-90°) | 3.8 | 0.1 | | | G0/10 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B1-U0-G2

Type IV Short





REPORT NUMBER: P195674

CATALOG NUMBER: NAV-AF-02-D-UNV-SL4-7050-600-HSS

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 39° | 45° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1046.4 | 1046.4 | 1046.4 | 1046.4 | 1046.4 | 1046.4 | 1046.4 | 1046.4 | 1046.4 | 1046.4 | 1046.4 |
| 2.5° | 1114.3 | 1116.3 | 1113.8 | 1109.2 | 1102.5 | 1098.4 | 1092.7 | 1080.4 | 1065.0 | 1051.6 | 1036.2 |
| 5° | 1123.0 | 1124.1 | 1121.0 | 1112.2 | 1102.0 | 1096.3 | 1089.1 | 1075.7 | 1059.8 | 1041.3 | 1013.6 |
| 7.5° | 1125.6 | 1125.1 | 1121.5 | 1110.7 | 1094.8 | 1087.6 | 1075.2 | 1058.8 | 1042.3 | 1025.4 | 994.0 |
| 10° | 1124.6 | 1124.6 | 1122.0 | 1111.7 | 1093.7 | 1087.1 | 1073.2 | 1055.7 | 1035.1 | 1018.2 | 984.8 |
| 12.5° | 1121.0 | 1123.0 | 1121.5 | 1115.8 | 1102.5 | 1097.3 | 1085.0 | 1067.5 | 1048.0 | 1030.5 | 995.1 |
| 15° | 1125.6 | 1128.7 | 1131.8 | 1129.7 | 1122.0 | 1117.4 | 1106.1 | 1088.1 | 1072.1 | 1053.6 | 1015.6 |
| 17.5° | 1144.1 | 1150.8 | 1158.0 | 1158.5 | 1150.3 | 1142.0 | 1129.2 | 1110.7 | 1095.3 | 1078.3 | 1037.2 |
| 20° | 1179.1 | 1184.2 | 1197.6 | 1200.1 | 1183.7 | 1171.9 | 1153.9 | 1132.3 | 1116.9 | 1102.5 | 1057.2 |
| 22.5° | 1231.0 | 1236.6 | 1247.4 | 1243.8 | 1216.1 | 1202.2 | 1179.6 | 1154.9 | 1139.0 | 1130.7 | 1080.4 |
| 25° | 1309.6 | 1311.1 | 1313.7 | 1297.8 | 1252.0 | 1236.6 | 1208.9 | 1181.1 | 1168.3 | 1167.2 | 1113.3 |
| 27.5° | 1402.1 | 1404.2 | 1392.9 | 1357.4 | 1292.1 | 1272.1 | 1240.7 | 1215.5 | 1209.4 | 1217.1 | 1154.9 |
| 30° | 1508.0 | 1508.5 | 1477.2 | 1419.6 | 1338.4 | 1316.3 | 1283.9 | 1256.2 | 1261.8 | 1280.8 | 1208.4 |
| 32.5° | 1616.4 | 1611.3 | 1568.1 | 1493.1 | 1401.6 | 1374.9 | 1347.1 | 1319.4 | 1335.8 | 1374.4 | 1286.5 |
| 35° | 1715.6 | 1713.6 | 1662.7 | 1575.3 | 1483.8 | 1460.2 | 1440.2 | 1410.9 | 1437.6 | 1500.3 | 1392.9 |
| 37.5° | 1814.8 | 1813.3 | 1755.2 | 1664.2 | 1585.1 | 1568.1 | 1553.2 | 1530.6 | 1574.3 | 1666.3 | 1535.2 |
| 40° | 1924.3 | 1921.7 | 1850.3 | 1762.9 | 1702.8 | 1693.5 | 1684.8 | 1675.0 | 1749.6 | 1877.5 | 1712.6 |
| 42.5° | 2059.5 | 2048.2 | 1951.0 | 1870.3 | 1832.3 | 1834.9 | 1835.4 | 1845.2 | 1961.8 | 2128.9 | 1921.7 |
| 45° | 2214.7 | 2189.5 | 2052.3 | 1985.5 | 1974.7 | 1990.1 | 2005.5 | 2046.1 | 2209.1 | 2418.2 | 2153.0 |
| 47.5° | 2365.3 | 2324.7 | 2169.0 | 2109.3 | 2131.4 | 2163.3 | 2200.3 | 2279.5 | 2486.6 | 2721.0 | 2362.7 |
| 50° | 2494.8 | 2453.2 | 2284.6 | 2235.3 | 2305.7 | 2353.0 | 2418.8 | 2538.5 | 2779.6 | 2976.9 | 2494.8 |
| 52.5° | 2596.6 | 2563.7 | 2406.9 | 2374.0 | 2498.9 | 2563.7 | 2667.0 | 2824.3 | 3056.1 | 3145.5 | 2587.3 |
| 55° | 2671.6 | 2655.2 | 2524.1 | 2528.7 | 2713.8 | 2807.3 | 2935.8 | 3113.6 | 3289.4 | 3276.6 | 2656.7 |
| 57.5° | 2756.4 | 2743.6 | 2647.0 | 2711.2 | 2972.3 | 3093.1 | 3241.6 | 3384.5 | 3459.0 | 3381.9 | 2724.6 |
| 60° | 2843.3 | 2847.4 | 2796.0 | 2932.2 | 3292.0 | 3425.6 | 3555.2 | 3590.6 | 3604.5 | 3488.8 | 2796.0 |
| 62.5° | 2909.1 | 2926.6 | 2931.2 | 3170.7 | 3619.9 | 3734.0 | 3790.0 | 3764.9 | 3761.8 | 3632.2 | 2790.4 |
| 65° | 2984.6 | 3030.4 | 3106.5 | 3432.3 | 3918.0 | 3993.1 | 4033.1 | 4069.6 | 3992.5 | 3674.9 | 2515.9 |
| 67.5° | 3115.2 | 3187.1 | 3358.3 | 3753.0 | 4262.4 | 4373.4 | 4487.0 | 4448.4 | 4027.0 | 3241.6 | 1916.6 |
| 70° | 3291.0 | 3378.9 | 3681.1 | 4171.9 | 4729.6 | 4915.6 | 5010.7 | 4418.1 | 3418.9 | 2239.9 | 1011.0 |
| 72° | 3180.0 | 3259.6 | 3780.8 | 4385.7 | 5060.6 | 5231.2 | 4993.2 | 3853.8 | 2478.4 | 1161.1 | 338.7 |
| 72.5° | 3072.0 | 3154.3 | 3748.9 | 4383.2 | 5093.5 | 5224.0 | 4879.7 | 3631.2 | 2193.1 | 903.6 | 233.3 |
| 75° | 2131.4 | 2235.3 | 3213.9 | 3940.1 | 4599.5 | 4456.1 | 3733.5 | 2198.8 | 794.6 | 155.2 | 77.1 |
| 77.5° | 1102.0 | 1182.1 | 1949.5 | 2784.2 | 3205.7 | 2935.8 | 2206.5 | 953.9 | 220.0 | 82.2 | 50.9 |
| 80° | 683.1 | 722.6 | 911.8 | 1371.8 | 1665.3 | 1456.6 | 973.5 | 385.5 | 140.8 | 48.8 | 40.6 |
| 82.5° | 353.6 | 383.9 | 574.1 | 553.5 | 615.2 | 511.4 | 359.3 | 322.8 | 86.9 | 30.3 | 41.6 |
| 85° | 116.2 | 123.4 | 352.6 | 368.0 | 263.2 | 176.8 | 159.3 | 307.9 | 25.2 | 19.5 | 35.5 |
| 87.5° | 15.4 | 18.0 | 123.9 | 210.7 | 129.5 | 80.2 | 95.6 | 108.4 | 8.7 | 10.8 | 9.8 |
| 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: P195674

CATALOG NUMBER: NAV-AF-02-D-UNV-SL4-7050-600-HSS

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1046.4 | 1046.4 | 1046.4 | 1046.4 | 1046.4 | 1046.4 | 1046.4 | 1046.4 | 1046.4 | 1046.4 | 1046.4 |
| 2.5° | 1025.9 | 1019.2 | 998.1 | 977.1 | 952.9 | 930.8 | 913.3 | 902.0 | 907.2 | 890.2 | 892.8 |
| 5° | 996.6 | 979.6 | 933.4 | 883.5 | 829.6 | 779.2 | 739.1 | 709.3 | 703.6 | 677.9 | 679.0 |
| 7.5° | 968.3 | 940.6 | 865.5 | 783.3 | 693.9 | 621.4 | 555.6 | 498.0 | 477.5 | 456.4 | 444.1 |
| 10° | 952.9 | 914.9 | 808.5 | 688.7 | 562.8 | 456.4 | 363.9 | 291.4 | 261.1 | 239.0 | 228.2 |
| 12.5° | 957.5 | 907.2 | 765.8 | 602.9 | 437.4 | 302.2 | 205.6 | 152.7 | 134.1 | 123.9 | 120.3 |
| 15° | 973.0 | 908.7 | 727.3 | 519.1 | 318.1 | 183.0 | 120.8 | 103.3 | 101.8 | 101.3 | 100.7 |
| 17.5° | 987.3 | 910.2 | 686.7 | 431.7 | 212.8 | 116.7 | 97.1 | 95.6 | 95.6 | 95.6 | 95.6 |
| 20° | 1002.2 | 910.8 | 642.0 | 340.3 | 139.8 | 95.6 | 91.5 | 90.5 | 91.5 | 91.5 | 91.5 |
| 22.5° | 1019.7 | 914.4 | 598.8 | 251.3 | 103.3 | 89.9 | 87.4 | 86.9 | 87.4 | 87.4 | 86.9 |
| 25° | 1041.3 | 922.1 | 552.0 | 179.9 | 93.5 | 86.3 | 83.8 | 83.3 | 83.8 | 83.3 | 83.3 |
| 27.5° | 1070.1 | 932.3 | 497.5 | 129.0 | 89.4 | 82.7 | 80.2 | 80.2 | 80.2 | 79.7 | 79.7 |
| 30° | 1107.1 | 944.7 | 424.5 | 101.8 | 85.3 | 79.2 | 77.1 | 77.1 | 76.6 | 76.1 | 76.1 |
| 32.5° | 1160.0 | 964.7 | 344.9 | 92.0 | 80.7 | 74.5 | 72.5 | 73.0 | 72.5 | 72.0 | 71.4 |
| 35° | 1235.1 | 996.1 | 266.2 | 86.9 | 76.1 | 69.9 | 67.8 | 67.8 | 67.8 | 66.8 | 66.8 |
| 37.5° | 1341.5 | 1043.9 | 199.4 | 81.7 | 71.4 | 65.3 | 62.7 | 62.7 | 62.2 | 61.2 | 61.7 |
| 40° | 1473.0 | 1104.0 | 144.4 | 77.1 | 66.8 | 60.1 | 58.1 | 57.1 | 56.0 | 55.0 | 55.0 |
| 42.5° | 1631.4 | 1162.6 | 108.4 | 72.5 | 62.2 | 56.0 | 53.5 | 52.4 | 50.4 | 49.3 | 48.8 |
| 45° | 1808.7 | 1224.8 | 89.9 | 66.8 | 57.1 | 51.4 | 49.3 | 47.3 | 44.7 | 43.2 | 42.7 |
| 47.5° | 1958.2 | 1262.8 | 80.2 | 61.2 | 51.9 | 46.8 | 44.7 | 41.6 | 38.5 | 37.5 | 37.5 |
| 50° | 2048.2 | 1246.9 | 72.0 | 55.5 | 46.8 | 42.1 | 39.6 | 35.5 | 33.4 | 32.4 | 31.9 |
| 52.5° | 2098.6 | 1199.6 | 65.3 | 50.9 | 42.1 | 37.0 | 33.4 | 29.8 | 28.8 | 27.8 | 27.8 |
| 55° | 2133.0 | 1131.3 | 58.1 | 46.3 | 38.0 | 32.4 | 28.3 | 25.7 | 24.7 | 24.2 | 23.6 |
| 57.5° | 2165.9 | 1048.0 | 51.4 | 42.1 | 33.9 | 28.8 | 24.2 | 23.1 | 21.1 | 20.6 | 20.6 |
| 60° | 2175.6 | 933.4 | 45.2 | 37.5 | 30.3 | 25.2 | 21.1 | 19.5 | 17.5 | 17.0 | 17.0 |
| 62.5° | 2051.3 | 742.7 | 40.1 | 31.9 | 26.7 | 21.6 | 18.5 | 16.4 | 14.4 | 14.4 | 14.4 |
| 65° | 1714.1 | 504.2 | 34.4 | 27.8 | 23.6 | 18.5 | 15.9 | 13.4 | 12.3 | 12.3 | 12.3 |
| 67.5° | 1194.0 | 281.1 | 29.3 | 23.6 | 20.0 | 15.4 | 13.4 | 11.3 | 10.8 | 11.3 | 11.3 |
| 70° | 538.1 | 111.5 | 24.7 | 19.5 | 16.4 | 12.8 | 11.3 | 9.8 | 10.8 | 10.8 | 10.8 |
| 72° | 161.4 | 59.6 | 20.6 | 15.9 | 13.4 | 11.3 | 9.8 | 9.3 | 10.3 | 10.8 | 10.8 |
| 72.5° | 119.8 | 53.5 | 19.5 | 15.4 | 13.4 | 10.8 | 9.3 | 9.3 | 10.3 | 10.8 | 10.8 |
| 75° | 61.7 | 36.5 | 14.9 | 11.3 | 9.8 | 8.7 | 7.7 | 8.7 | 10.3 | 10.3 | 10.3 |
| 77.5° | 48.3 | 29.8 | 12.3 | 8.7 | 8.2 | 7.7 | 7.2 | 8.2 | 9.3 | 9.3 | 9.3 |
| 80° | 45.2 | 19.5 | 9.8 | 8.2 | 7.2 | 6.7 | 6.7 | 7.2 | 8.2 | 8.7 | 8.7 |
| 82.5° | 45.7 | 15.9 | 8.7 | 7.7 | 6.7 | 6.2 | 6.2 | 6.7 | 7.7 | 8.2 | 8.2 |
| 85° | 29.3 | 10.8 | 7.7 | 6.7 | 6.2 | 5.7 | 5.7 | 6.2 | 7.2 | 7.7 | 7.7 |
| 87.5° | 9.8 | 8.2 | 6.7 | 6.2 | 5.1 | 5.1 | 5.1 | 5.1 | 6.2 | 6.7 | 7.2 |
| 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)