

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: P196563

Luminaire Tested: **NAV-AF-03-D-UNV-SL2-7030-600**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196563  
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-03-D-UNV-SL2-7030-600  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(3) 70 CRI, 3000K, 615mA 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: 11316 lumens  
Efficiency: N/A  
Efficacy: 117.9 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 1.5' x H: 0')  
IES Classification: Type II - Medium - Semi-Cutoff  
BUG Rating: B2 - U0 - G2

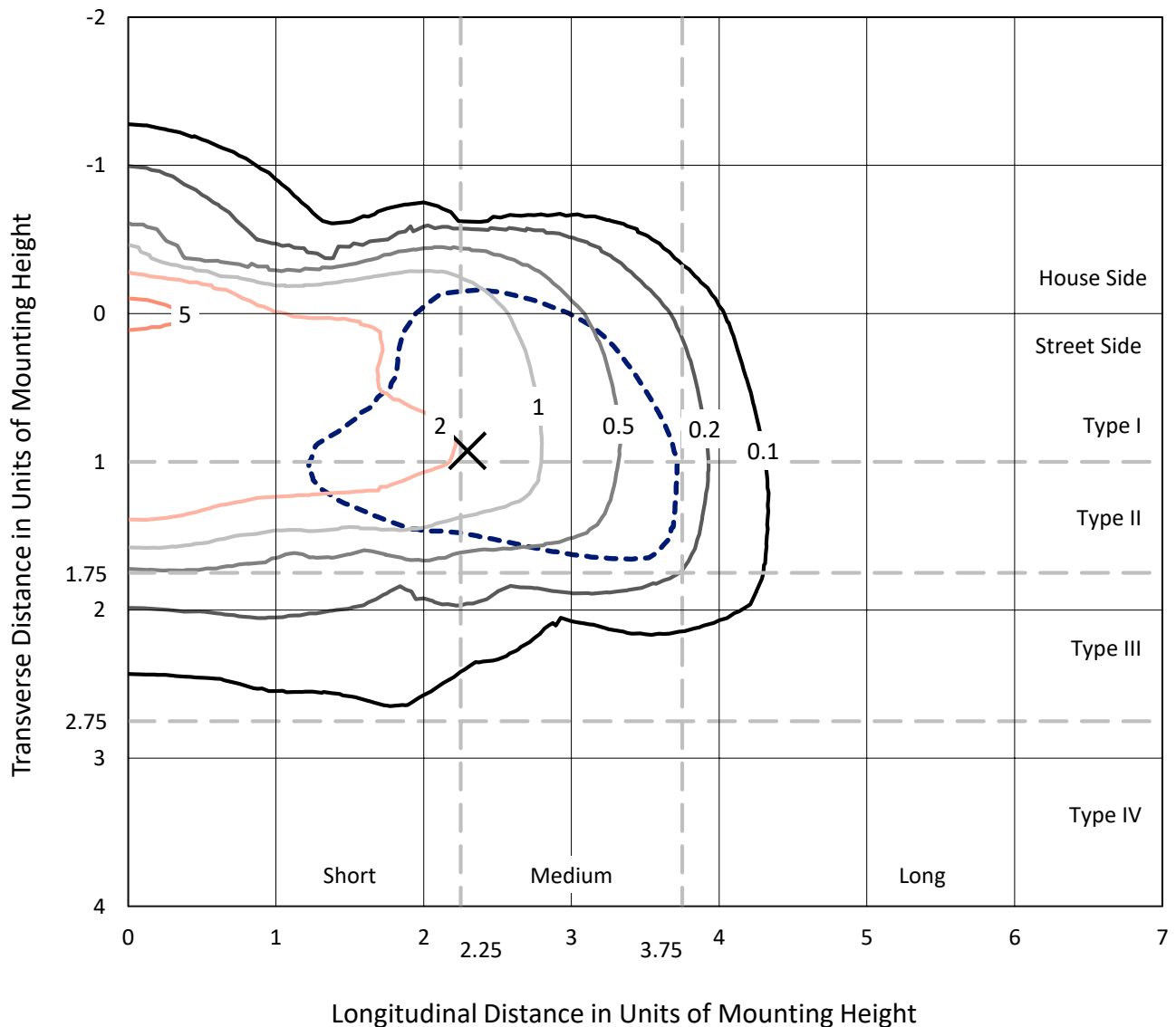
Input Watts (W): 96  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

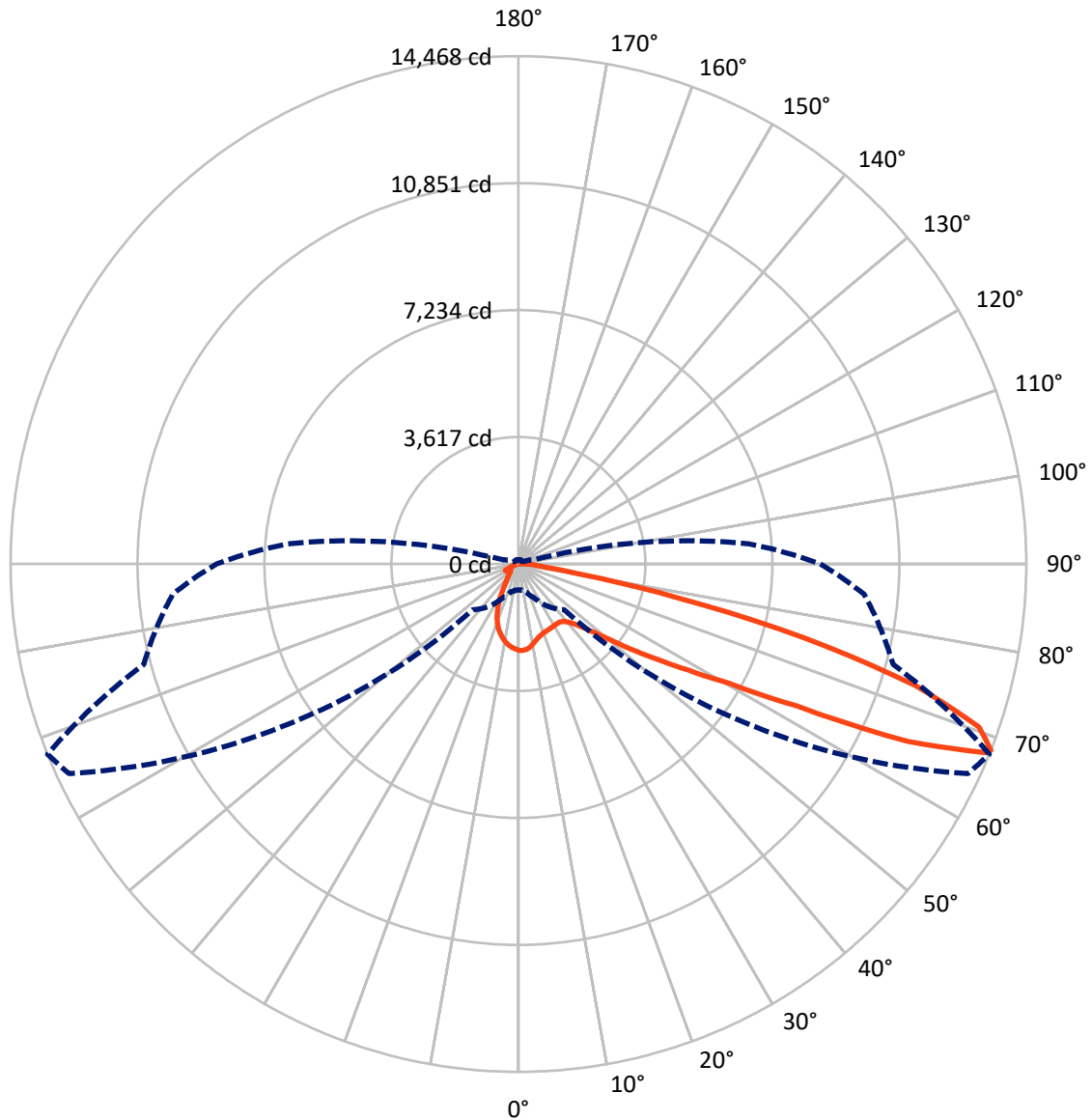
✕ Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 6.2 fc  
 Type II - Medium - Semi-Cutoff

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### Luminous Intensity Polar Plot



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

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**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 1851.3   | 0.0    | 1851.3  |
|                    | % Fixture | 16.4     | 0.0    | 16.4    |
| <b>Street Side</b> | Lumens    | 9464.7   | 0.0    | 9464.7  |
|                    | % Fixture | 83.6     | 0.0    | 83.6    |
| <b>Total</b>       | Lumens    | 11316.0  | 0.0    | 11316.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 211.0   | 1.9       |
| 10°-20°   | 489.3   | 4.3       |
| 20°-30°   | 661.8   | 5.8       |
| 30°-40°   | 933.1   | 8.2       |
| 40°-50°   | 1534.4  | 13.6      |
| 50°-60°   | 2378.4  | 21.0      |
| 60°-70°   | 3083.8  | 27.3      |
| 70°-80°   | 1769.6  | 15.6      |
| 80°-90°   | 254.6   | 2.3       |
| 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°    | 11316.0 | 100.0     |
| 0°-180°   | 11316.0 | 100.0     |



REPORT NUMBER: P196563

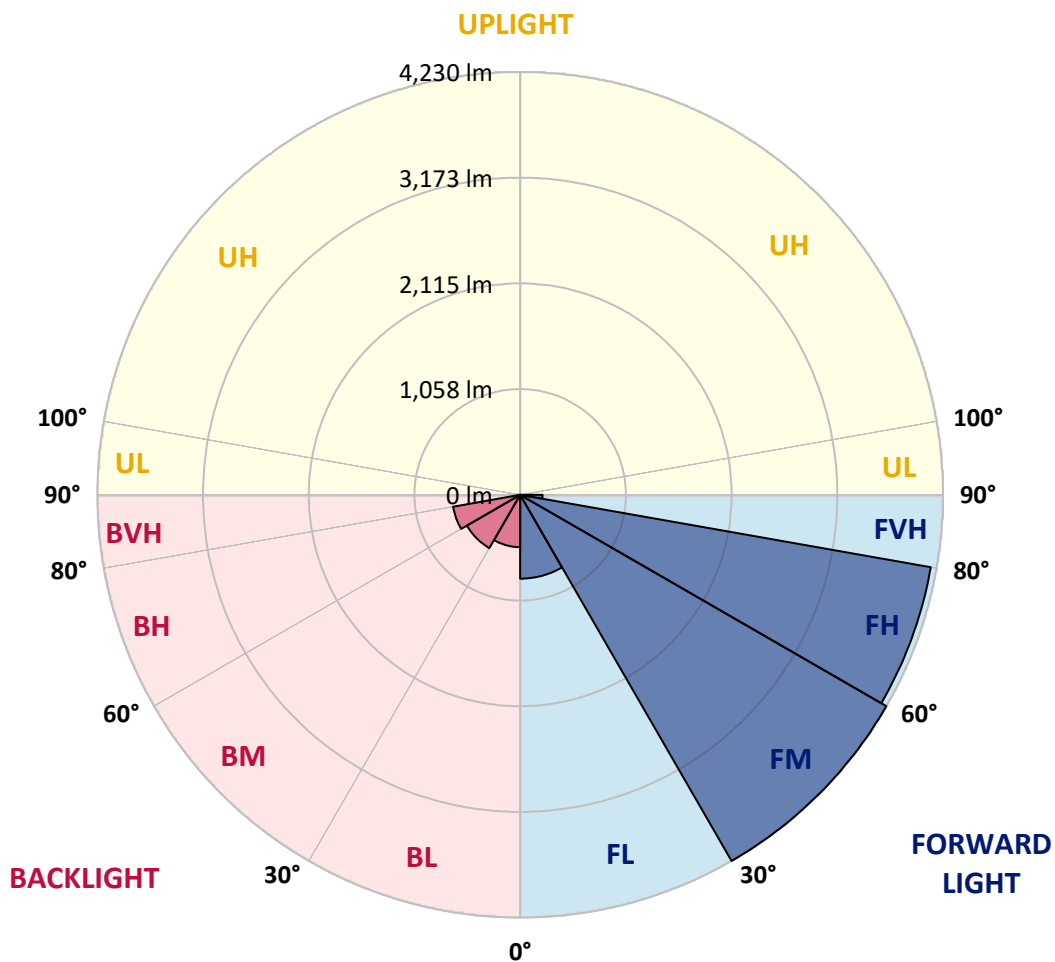
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone           | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|----------------|--------|-----------|-------------------------|------|---------|
|                |        |           | B                       | U    | G       |
| FL (0°-30°)    | 838.7  | 7.4       |                         |      |         |
| FM (30°-60°)   | 4230.1 | 37.4      |                         |      |         |
| FH (60°-80°)   | 4171.6 | 36.9      |                         |      | G2/5000 |
| FVH (80°-90°)  | 224.3  | 2.0       |                         |      | G2/225  |
| BL (0°-30°)    | 523.4  | 4.6       | B2/1000                 |      |         |
| BM (30°-60°)   | 615.8  | 5.4       | B1/1000                 |      |         |
| BH (60°-80°)   | 681.8  | 6.0       | B2/1000                 |      | G2/1000 |
| BVH (80°-90°)  | 30.4   | 0.3       |                         |      | G1/100  |
| UL (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B2-U0-G2**

Type II Medium





REPORT NUMBER: P196563

CATALOG NUMBER: NAV-AF-03-D-UNV-SL2-7030-600

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 65°     | 68°     | 75°     | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|--------|
| 0°    | 2462.2 | 2462.2 | 2462.2 | 2462.2 | 2462.2 | 2462.2 | 2462.2 | 2462.2  | 2462.2  | 2462.2  | 2462.2 |
| 2.5°  | 2396.5 | 2415.7 | 2415.7 | 2429.7 | 2442.3 | 2452.7 | 2461.5 | 2461.5  | 2461.5  | 2455.6  | 2450.4 |
| 5°    | 2144.4 | 2170.3 | 2173.9 | 2209.4 | 2255.9 | 2312.9 | 2376.5 | 2432.6  | 2443.8  | 2464.5  | 2472.6 |
| 7.5°  | 1969.2 | 1977.4 | 1991.4 | 2015.9 | 2063.2 | 2133.3 | 2233.2 | 2358.8  | 2389.1  | 2454.1  | 2488.2 |
| 10°   | 1845.1 | 1851.7 | 1863.5 | 1887.9 | 1930.8 | 1994.3 | 2092.7 | 2255.9  | 2306.3  | 2421.6  | 2488.8 |
| 12.5° | 1754.1 | 1759.3 | 1770.3 | 1792.5 | 1836.2 | 1893.0 | 1993.7 | 2163.7  | 2225.7  | 2389.1  | 2499.2 |
| 15°   | 1683.1 | 1692.0 | 1700.8 | 1722.4 | 1766.7 | 1821.4 | 1923.4 | 2096.3  | 2163.7  | 2363.2  | 2518.4 |
| 17.5° | 1655.1 | 1659.5 | 1661.0 | 1672.1 | 1712.0 | 1767.4 | 1869.4 | 2049.0  | 2118.5  | 2342.5  | 2533.1 |
| 20°   | 1672.8 | 1673.6 | 1658.8 | 1651.4 | 1674.3 | 1725.3 | 1824.3 | 2013.5  | 2084.5  | 2324.1  | 2539.1 |
| 22.5° | 1750.5 | 1750.5 | 1712.0 | 1679.5 | 1663.9 | 1695.7 | 1794.0 | 1989.2  | 2066.1  | 2310.0  | 2539.1 |
| 25°   | 1898.3 | 1891.6 | 1831.7 | 1767.4 | 1698.7 | 1685.4 | 1774.8 | 1973.7  | 2052.0  | 2302.6  | 2529.6 |
| 27.5° | 2092.7 | 2086.8 | 2010.6 | 1915.2 | 1791.1 | 1707.5 | 1768.2 | 1961.1  | 2038.0  | 2291.5  | 2508.8 |
| 30°   | 2329.2 | 2324.1 | 2237.5 | 2112.6 | 1929.3 | 1777.7 | 1783.6 | 1952.3  | 2026.9  | 2273.0  | 2474.0 |
| 32.5° | 2565.0 | 2562.0 | 2493.3 | 2365.5 | 2119.9 | 1896.7 | 1824.3 | 1950.8  | 2021.0  | 2250.8  | 2432.0 |
| 35°   | 2802.3 | 2802.3 | 2760.1 | 2652.3 | 2376.5 | 2075.7 | 1909.3 | 1978.1  | 2032.0  | 2239.0  | 2395.7 |
| 37.5° | 3152.6 | 3138.6 | 3060.3 | 2948.7 | 2699.6 | 2307.8 | 2046.9 | 2035.7  | 2075.0  | 2258.9  | 2383.9 |
| 40°   | 3695.2 | 3654.6 | 3458.7 | 3270.9 | 3052.1 | 2605.0 | 2247.9 | 2147.4  | 2171.0  | 2327.0  | 2412.0 |
| 42.5° | 4263.0 | 4198.7 | 3939.2 | 3639.1 | 3416.5 | 2971.6 | 2511.8 | 2328.5  | 2327.8  | 2458.6  | 2501.4 |
| 45°   | 4750.0 | 4716.8 | 4435.9 | 4055.2 | 3832.7 | 3384.0 | 2845.1 | 2597.5  | 2570.9  | 2662.5  | 2673.7 |
| 47.5° | 5033.1 | 5010.9 | 4841.8 | 4495.8 | 4326.5 | 3871.2 | 3268.0 | 2970.9  | 2920.6  | 2975.2  | 2958.3 |
| 50°   | 4954.8 | 4976.2 | 4927.5 | 4750.8 | 4857.2 | 4555.7 | 3806.8 | 3482.3  | 3387.0  | 3441.6  | 3400.2 |
| 52.5° | 4542.4 | 4600.1 | 4643.6 | 4677.6 | 5162.5 | 5471.4 | 4484.0 | 4121.0  | 4041.9  | 4032.3  | 3992.5 |
| 55°   | 3799.5 | 3891.2 | 4028.6 | 4278.5 | 5080.4 | 6207.0 | 5666.6 | 4893.5  | 4778.1  | 4717.5  | 4733.1 |
| 57.5° | 2585.7 | 2724.7 | 3021.1 | 3496.4 | 4654.0 | 6520.5 | 7415.7 | 5891.4  | 5696.2  | 5480.3  | 5530.7 |
| 60°   | 1424.4 | 1540.4 | 1893.0 | 2372.1 | 3680.4 | 6473.8 | 8965.7 | 7513.2  | 6898.8  | 6326.7  | 6430.2 |
| 62.5° | 921.8  | 947.0  | 1209.3 | 1620.4 | 2258.9 | 5715.5 | 9826.9 | 10223.8 | 8922.1  | 7443.0  | 7588.6 |
| 65°   | 740.7  | 758.4  | 887.0  | 1306.8 | 1573.8 | 3676.8 | 9865.2 | 13035.7 | 12177.5 | 8959.8  | 8964.1 |
| 67.5° | 723.7  | 731.8  | 806.5  | 1099.1 | 1476.2 | 2001.7 | 8527.3 | 14144.4 | 14343.3 | 10750.1 | 9884.4 |
| 68°   | 734.0  | 743.6  | 819.0  | 1065.2 | 1475.4 | 1845.1 | 7881.3 | 14127.4 | 14468.2 | 11049.5 | 9884.4 |
| 70°   | 647.6  | 659.4  | 835.3  | 1102.1 | 1412.6 | 1586.3 | 5396.9 | 13377.1 | 13925.6 | 11737.7 | 9379.0 |
| 72.5° | 338.6  | 329.0  | 413.2  | 870.0  | 1590.0 | 1652.9 | 2851.1 | 11175.9 | 11816.1 | 10870.6 | 8103.1 |
| 75°   | 263.9  | 240.3  | 231.4  | 343.7  | 1398.5 | 1714.2 | 1655.9 | 7943.3  | 8426.8  | 7836.2  | 5416.1 |
| 77.5° | 248.3  | 219.5  | 202.5  | 203.3  | 615.7  | 1783.6 | 1339.4 | 4674.6  | 4674.6  | 3738.1  | 1728.3 |
| 80°   | 199.6  | 172.9  | 161.9  | 184.7  | 297.1  | 1644.0 | 1397.9 | 2130.3  | 1817.0  | 966.2   | 476.1  |
| 82.5° | 131.5  | 117.6  | 118.2  | 150.0  | 225.4  | 1097.7 | 1618.7 | 1051.8  | 790.2   | 428.0   | 280.1  |
| 85°   | 83.6   | 71.7   | 79.9   | 105.0  | 168.6  | 489.4  | 1602.7 | 731.1   | 523.4   | 240.3   | 139.8  |
| 87.5° | 42.2   | 32.6   | 39.9   | 54.7   | 102.7  | 140.4  | 1319.5 | 652.8   | 388.1   | 99.8    | 76.2   |
| 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: P196563

CATALOG NUMBER: NAV-AF-03-D-UNV-SL2-7030-600

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 2462.2 | 2462.2 | 2462.2 | 2462.2 | 2462.2 | 2462.2 | 2462.2 | 2462.2 | 2462.2 | 2462.2 | 2462.2 |
| 2.5°  | 2450.4 | 2434.2 | 2426.0 | 2412.8 | 2396.5 | 2380.2 | 2369.1 | 2364.0 | 2361.0 | 2362.5 | 2361.7 |
| 5°    | 2468.1 | 2446.8 | 2412.0 | 2362.5 | 2311.5 | 2257.6 | 2216.1 | 2184.3 | 2164.3 | 2158.4 | 2157.0 |
| 7.5°  | 2481.5 | 2450.4 | 2385.3 | 2295.2 | 2208.0 | 2113.4 | 2032.8 | 1968.6 | 1924.8 | 1904.9 | 1904.2 |
| 10°   | 2479.3 | 2439.3 | 2336.6 | 2203.5 | 2075.7 | 1936.7 | 1810.3 | 1702.4 | 1624.0 | 1586.3 | 1584.8 |
| 12.5° | 2481.5 | 2426.7 | 2276.8 | 2096.3 | 1913.0 | 1714.2 | 1526.5 | 1358.6 | 1241.8 | 1186.4 | 1184.2 |
| 15°   | 2490.3 | 2413.4 | 2215.3 | 1976.6 | 1723.0 | 1442.2 | 1173.9 | 963.1  | 856.7  | 820.5  | 820.5  |
| 17.5° | 2489.6 | 2391.2 | 2144.4 | 1837.6 | 1497.6 | 1121.3 | 801.3  | 671.2  | 660.8  | 694.2  | 699.3  |
| 20°   | 2474.8 | 2355.8 | 2052.8 | 1672.8 | 1233.0 | 776.2  | 543.3  | 524.9  | 607.6  | 699.3  | 709.6  |
| 22.5° | 2451.9 | 2310.0 | 1947.0 | 1481.3 | 924.8  | 505.7  | 419.1  | 447.2  | 559.5  | 673.4  | 689.7  |
| 25°   | 2420.1 | 2254.6 | 1825.8 | 1258.8 | 615.0  | 363.8  | 349.6  | 384.4  | 463.5  | 539.6  | 551.4  |
| 27.5° | 2373.5 | 2184.3 | 1693.5 | 1017.9 | 392.5  | 299.4  | 304.5  | 329.0  | 363.0  | 395.5  | 402.1  |
| 30°   | 2315.2 | 2102.2 | 1549.4 | 751.0  | 297.8  | 267.5  | 276.4  | 291.2  | 306.0  | 326.6  | 331.2  |
| 32.5° | 2255.9 | 2018.8 | 1399.3 | 515.9  | 260.1  | 250.6  | 259.5  | 267.5  | 280.1  | 294.2  | 297.1  |
| 35°   | 2202.7 | 1941.1 | 1244.8 | 360.0  | 243.9  | 239.5  | 243.9  | 249.1  | 261.6  | 275.8  | 277.2  |
| 37.5° | 2164.3 | 1877.5 | 1083.7 | 284.6  | 234.4  | 229.9  | 232.0  | 234.4  | 249.1  | 269.8  | 272.0  |
| 40°   | 2159.2 | 1835.4 | 920.3  | 255.7  | 226.9  | 221.0  | 219.5  | 221.0  | 240.3  | 263.9  | 266.1  |
| 42.5° | 2209.4 | 1837.6 | 760.7  | 243.9  | 221.0  | 214.3  | 208.4  | 211.4  | 228.5  | 246.9  | 248.3  |
| 45°   | 2328.5 | 1889.4 | 622.4  | 238.7  | 215.9  | 210.7  | 201.8  | 203.3  | 211.4  | 221.0  | 222.5  |
| 47.5° | 2538.4 | 2002.5 | 516.7  | 235.8  | 211.4  | 206.9  | 195.9  | 191.4  | 192.2  | 197.3  | 197.3  |
| 50°   | 2873.9 | 2191.7 | 452.4  | 232.8  | 207.7  | 199.6  | 187.1  | 178.1  | 175.9  | 178.8  | 179.6  |
| 52.5° | 3374.5 | 2516.2 | 421.3  | 226.9  | 201.0  | 190.0  | 175.9  | 167.0  | 163.4  | 166.3  | 166.3  |
| 55°   | 4050.8 | 3034.3 | 406.6  | 218.8  | 193.0  | 178.1  | 165.5  | 158.2  | 155.2  | 157.5  | 157.5  |
| 57.5° | 4821.7 | 3707.8 | 431.7  | 207.7  | 182.6  | 165.5  | 156.7  | 151.6  | 149.3  | 151.6  | 152.3  |
| 60°   | 5737.6 | 4588.9 | 604.6  | 193.7  | 171.5  | 154.5  | 149.3  | 146.4  | 144.9  | 147.1  | 147.1  |
| 62.5° | 6955.1 | 5761.2 | 935.8  | 182.6  | 159.6  | 144.1  | 142.7  | 141.2  | 139.8  | 141.9  | 141.9  |
| 65°   | 8269.4 | 6827.9 | 963.1  | 175.9  | 149.3  | 135.3  | 136.0  | 136.0  | 134.5  | 136.8  | 136.8  |
| 67.5° | 8687.8 | 6735.5 | 538.1  | 167.8  | 136.8  | 126.4  | 129.4  | 129.4  | 128.6  | 130.8  | 130.1  |
| 68°   | 8599.0 | 6589.2 | 468.6  | 165.5  | 134.5  | 124.2  | 127.2  | 127.9  | 127.2  | 129.4  | 128.6  |
| 70°   | 7938.2 | 5784.9 | 308.2  | 153.0  | 124.9  | 116.8  | 121.3  | 122.0  | 121.3  | 124.2  | 123.5  |
| 72.5° | 6553.0 | 4339.1 | 227.7  | 133.9  | 113.1  | 107.2  | 111.7  | 112.3  | 113.1  | 116.1  | 115.3  |
| 75°   | 4161.6 | 2396.5 | 179.6  | 113.8  | 101.3  | 96.1   | 100.5  | 102.7  | 104.3  | 108.7  | 106.4  |
| 77.5° | 1139.8 | 727.3  | 145.7  | 96.8   | 87.2   | 85.0   | 88.0   | 90.9   | 92.5   | 97.6   | 93.9   |
| 80°   | 399.2  | 321.6  | 121.3  | 82.1   | 72.4   | 71.7   | 74.7   | 77.6   | 79.1   | 83.6   | 79.1   |
| 82.5° | 242.4  | 209.9  | 96.8   | 64.4   | 57.0   | 56.2   | 59.9   | 62.9   | 64.4   | 64.4   | 61.4   |
| 85°   | 126.4  | 110.9  | 70.9   | 45.2   | 39.3   | 36.9   | 43.6   | 47.3   | 48.1   | 47.3   | 45.2   |
| 87.5° | 70.9   | 62.9   | 37.7   | 21.5   | 17.7   | 18.5   | 23.0   | 28.1   | 30.3   | 29.6   | 28.1   |
| 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)