

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: P270352

Luminaire Tested: **NAV-AF-02-D-UNV-SL2-7027-HSS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P270352  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24258)  
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-SL2-7027-HSS  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(2) 70 CRI, 2700K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II  
SPILL LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 8633.1 lumens  
Efficiency: N/A  
Efficacy: 76.4 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')  
IES Classification: Type II - Medium - Semi-Cutoff  
BUG Rating: B1 - U0 - G2

Input Watts (W): 113  
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

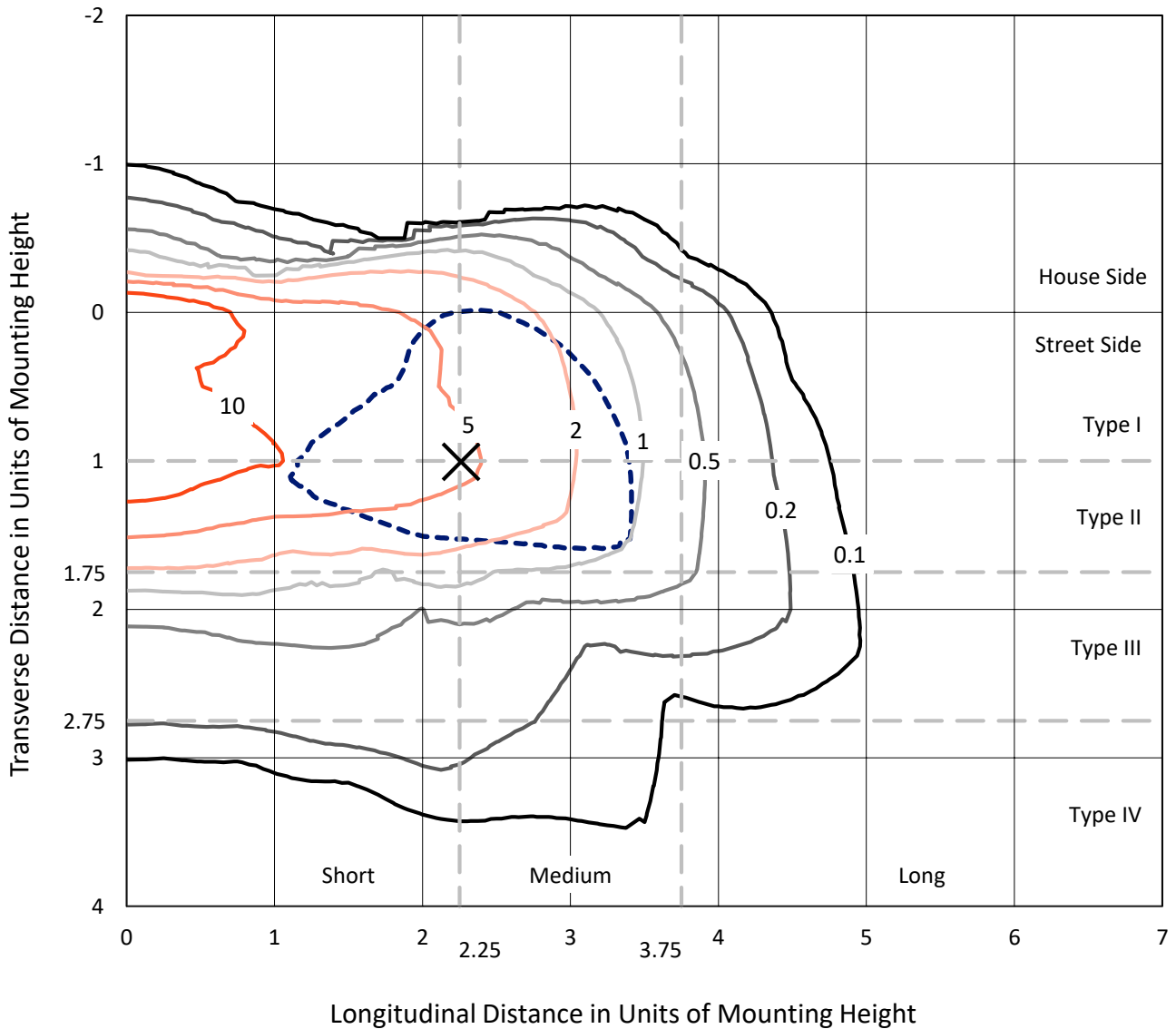


REPORT NUMBER: P270352

CATALOG NUMBER: NAV-AF-02-D-UNV-SL2-7027-HSS

### Iso-Footcandle Lines of Horizontal Illumination

× Max cd  
 - - - 1/2 Max cd

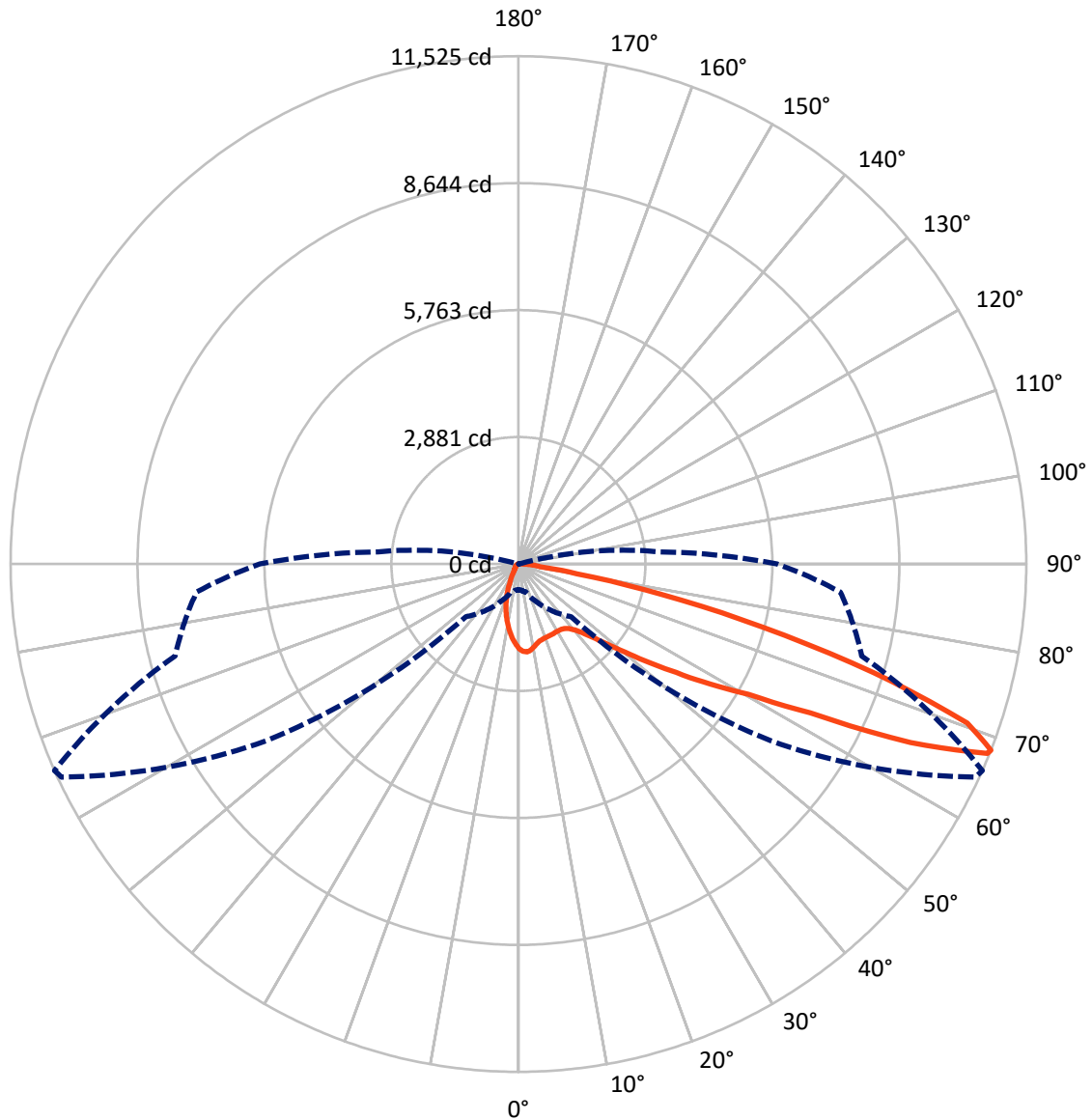


Based on 10 foot mounting height. Maximum calculated value = 19.2 fc  
 Type II - Medium - Semi-Cutoff

REPORT NUMBER: P270352

CATALOG NUMBER: NAV-AF-02-D-UNV-SL2-7027-HSS

### Luminous Intensity Polar Plot



— Vertical Plane Through 66-Deg Lateral      - - - Horizontal Cone Through 68-Deg Vertical

REPORT NUMBER: P270352

CATALOG NUMBER: NAV-AF-02-D-UNV-SL2-7027-HSS

**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 874.5    | 0.0    | 874.5  |
|                    | % Fixture | 10.1     | 0.0    | 10.1   |
| <b>Street Side</b> | Lumens    | 7758.7   | 0.0    | 7758.7 |
|                    | % Fixture | 89.9     | 0.0    | 89.9   |
| <b>Total</b>       | Lumens    | 8633.1   | 0.0    | 8633.1 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 157.7  | 1.8       |
| 10°-20°   | 339.3  | 3.9       |
| 20°-30°   | 491.6  | 5.7       |
| 30°-40°   | 752.6  | 8.7       |
| 40°-50°   | 1287.2 | 14.9      |
| 50°-60°   | 2013.6 | 23.3      |
| 60°-70°   | 2318.6 | 26.9      |
| 70°-80°   | 1160.3 | 13.4      |
| 80°-90°   | 112.4  | 1.3       |
| 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°    | 8633.1 | 100.0     |
| 0°-180°   | 8633.1 | 100.0     |



REPORT NUMBER: P270352

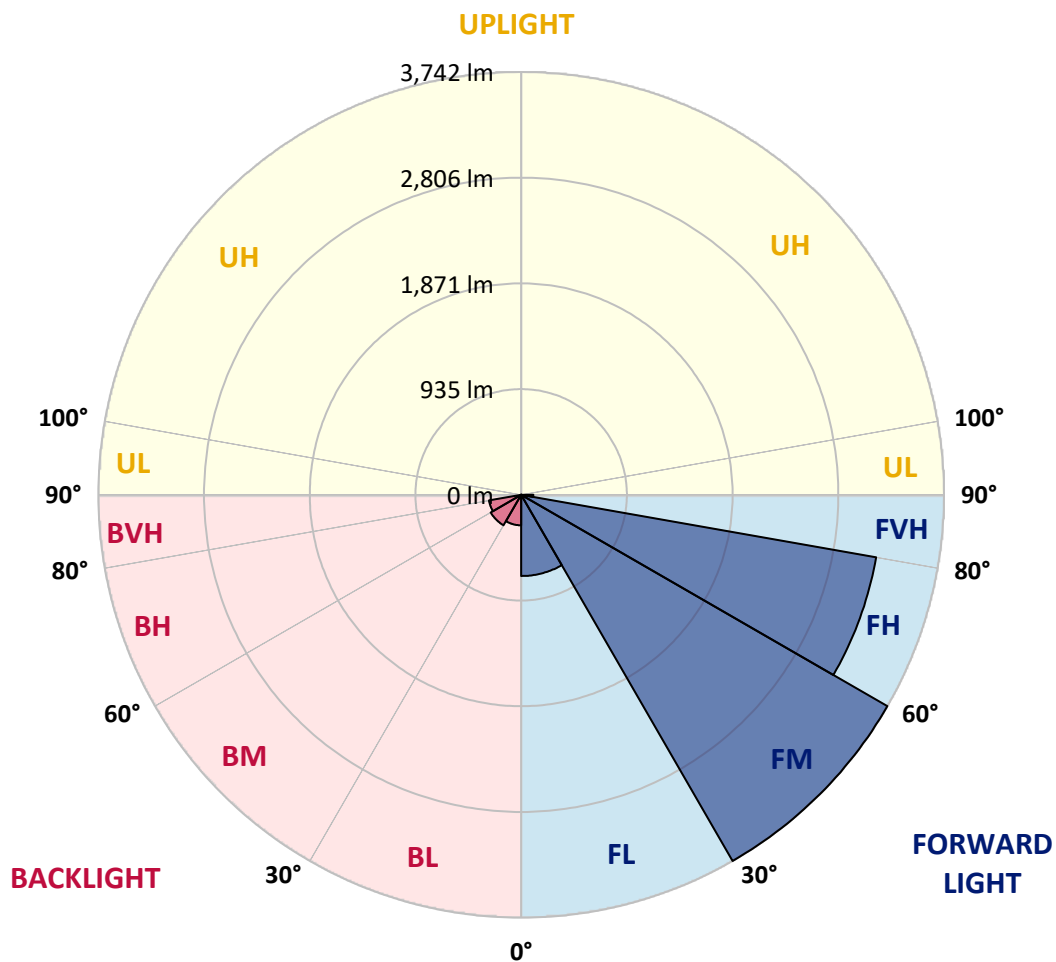
CATALOG NUMBER: NAV-AF-02-D-UNV-SL2-7027-HSS

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

| Zone           | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|----------------|--------|-----------|-------------------------|------|---------|
|                |        |           | B                       | U    | G       |
| FL (0°-30°)    | 718.7  | 8.3       |                         |      |         |
| FM (30°-60°)   | 3742.0 | 43.3      |                         |      |         |
| FH (60°-80°)   | 3189.9 | 36.9      |                         |      | G2/5000 |
| FVH (80°-90°)  | 108.1  | 1.3       |                         |      | G2/225  |
| BL (0°-30°)    | 269.9  | 3.1       | B1/500                  |      |         |
| BM (30°-60°)   | 311.4  | 3.6       | B1/1000                 |      |         |
| BH (60°-80°)   | 288.9  | 3.3       | B1/500                  |      | G1/500  |
| BVH (80°-90°)  | 4.3    | 0.0       |                         |      | 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 II Medium





REPORT NUMBER: P270352

CATALOG NUMBER: NAV-AF-02-D-UNV-SL2-7027-HSS

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 65°     | 66°     | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|---------|---------|--------|--------|
| 0°    | 1923.5 | 1923.5 | 1923.5 | 1923.5 | 1923.5 | 1923.5 | 1923.5 | 1923.5  | 1923.5  | 1923.5 | 1923.5 |
| 2.5°  | 2023.1 | 2024.4 | 2023.7 | 2025.7 | 2024.4 | 2014.2 | 2003.3 | 1980.4  | 1982.3  | 1952.6 | 1919.3 |
| 5°    | 1880.7 | 1892.2 | 1903.7 | 1915.2 | 1943.0 | 1967.4 | 1996.6 | 2003.3  | 2003.3  | 1977.6 | 1928.8 |
| 7.5°  | 1735.6 | 1736.3 | 1749.2 | 1764.8 | 1802.1 | 1846.7 | 1914.6 | 1975.6  | 1976.9  | 1983.6 | 1930.2 |
| 10°   | 1626.6 | 1630.0 | 1638.8 | 1655.7 | 1692.9 | 1737.1 | 1812.9 | 1908.4  | 1915.9  | 1966.1 | 1916.7 |
| 12.5° | 1541.9 | 1546.0 | 1555.3 | 1575.0 | 1609.0 | 1654.3 | 1734.3 | 1843.4  | 1853.6  | 1949.1 | 1912.5 |
| 15°   | 1476.8 | 1482.2 | 1489.6 | 1509.3 | 1546.0 | 1594.0 | 1681.4 | 1800.1  | 1812.2  | 1942.3 | 1925.3 |
| 17.5° | 1449.7 | 1449.7 | 1449.0 | 1462.5 | 1499.1 | 1547.9 | 1639.3 | 1776.9  | 1792.6  | 1947.7 | 1947.0 |
| 20°   | 1461.2 | 1459.1 | 1445.0 | 1441.5 | 1463.9 | 1512.7 | 1606.2 | 1762.0  | 1779.7  | 1957.9 | 1973.5 |
| 22.5° | 1522.2 | 1518.0 | 1486.2 | 1459.8 | 1453.1 | 1485.5 | 1583.8 | 1752.0  | 1773.0  | 1979.0 | 2008.8 |
| 25°   | 1651.7 | 1639.3 | 1595.4 | 1535.7 | 1482.2 | 1478.8 | 1568.3 | 1746.5  | 1768.9  | 2003.3 | 2047.3 |
| 27.5° | 1819.6 | 1816.4 | 1745.9 | 1665.8 | 1562.8 | 1501.2 | 1563.5 | 1742.4  | 1764.8  | 2020.9 | 2078.6 |
| 30°   | 2028.5 | 2029.8 | 1948.5 | 1844.1 | 1688.3 | 1564.2 | 1578.4 | 1740.3  | 1763.5  | 2022.4 | 2092.2 |
| 32.5° | 2244.0 | 2245.4 | 2177.5 | 2065.7 | 1859.8 | 1672.6 | 1620.5 | 1749.9  | 1770.9  | 2017.0 | 2091.4 |
| 35°   | 2451.4 | 2453.4 | 2412.7 | 2322.6 | 2088.6 | 1823.1 | 1699.8 | 1782.3  | 1797.2  | 2020.3 | 2090.0 |
| 37.5° | 2713.6 | 2721.8 | 2671.6 | 2587.6 | 2376.0 | 2044.1 | 1829.2 | 1848.2  | 1860.3  | 2048.0 | 2100.2 |
| 40°   | 3160.9 | 3150.0 | 3006.4 | 2864.1 | 2687.9 | 2313.0 | 2016.2 | 1961.3  | 1965.4  | 2119.9 | 2138.9 |
| 42.5° | 3682.1 | 3668.5 | 3422.5 | 3177.1 | 3008.5 | 2637.8 | 2255.5 | 2134.8  | 2134.2  | 2240.6 | 2222.9 |
| 45°   | 4130.8 | 4122.6 | 3863.7 | 3536.4 | 3363.6 | 2996.1 | 2550.3 | 2384.9  | 2376.7  | 2449.3 | 2376.0 |
| 47.5° | 4449.2 | 4442.5 | 4246.6 | 3918.5 | 3774.1 | 3390.7 | 2918.2 | 2725.7  | 2708.8  | 2722.5 | 2624.8 |
| 50°   | 4480.4 | 4473.0 | 4404.5 | 4193.7 | 4254.1 | 3969.4 | 3373.0 | 3172.5  | 3150.7  | 3129.8 | 3001.0 |
| 52.5° | 4188.9 | 4188.3 | 4224.2 | 4210.6 | 4590.2 | 4714.2 | 3930.9 | 3724.7  | 3699.0  | 3645.5 | 3517.4 |
| 55°   | 3593.3 | 3589.8 | 3726.1 | 3923.9 | 4582.8 | 5482.7 | 4781.3 | 4382.1  | 4348.2  | 4241.2 | 4073.2 |
| 57.5° | 2625.4 | 2607.9 | 2892.5 | 3312.1 | 4260.8 | 5819.0 | 6132.0 | 5198.9  | 5142.5  | 4803.0 | 4544.2 |
| 60°   | 1449.7 | 1456.4 | 1822.4 | 2319.2 | 3498.4 | 5752.4 | 7374.9 | 6151.1  | 6003.3  | 5287.7 | 5026.6 |
| 62.5° | 812.5  | 829.6  | 1102.0 | 1507.3 | 2230.4 | 5213.8 | 8041.8 | 7789.7  | 7434.0  | 5852.7 | 5636.7 |
| 65°   | 614.7  | 624.9  | 761.8  | 1162.9 | 1406.2 | 3643.4 | 8148.3 | 10081.0 | 9774.1  | 6709.4 | 6607.8 |
| 67.5° | 578.8  | 587.0  | 654.0  | 964.4  | 1281.0 | 1889.4 | 7347.1 | 11436.5 | 11475.2 | 7877.9 | 7360.1 |
| 68°   | 582.8  | 593.1  | 660.2  | 927.8  | 1278.8 | 1690.3 | 7005.6 | 11443.4 | 11525.3 | 8066.2 | 7334.3 |
| 70°   | 535.4  | 538.2  | 698.1  | 910.3  | 1239.5 | 1331.7 | 5068.0 | 10659.2 | 10806.3 | 8290.5 | 6658.0 |
| 72.5° | 204.6  | 205.4  | 313.1  | 788.3  | 1298.5 | 1339.2 | 2553.0 | 8424.8  | 8432.2  | 7215.0 | 5190.6 |
| 75°   | 106.4  | 89.4   | 98.3   | 246.7  | 1240.2 | 1305.2 | 1281.0 | 5752.4  | 5716.5  | 4879.7 | 3180.5 |
| 77.5° | 73.2   | 62.3   | 65.8   | 85.3   | 515.7  | 1304.6 | 925.1  | 3308.0  | 3300.6  | 2075.9 | 907.5  |
| 80°   | 41.3   | 35.9   | 39.3   | 71.9   | 181.0  | 1224.7 | 862.1  | 1421.8  | 1339.8  | 364.6  | 147.1  |
| 82.5° | 21.0   | 17.6   | 21.0   | 60.4   | 112.5  | 770.6  | 838.4  | 557.8   | 496.8   | 86.7   | 95.6   |
| 85°   | 5.4    | 5.4    | 10.2   | 42.0   | 69.8   | 252.9  | 751.6  | 402.6   | 361.8   | 38.0   | 67.8   |
| 87.5° | 1.3    | 0.7    | 4.0    | 15.6   | 25.1   | 54.8   | 416.9  | 224.3   | 193.1   | 19.7   | 39.3   |
| 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: P270352

CATALOG NUMBER: NAV-AF-02-D-UNV-SL2-7027-HSS

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1923.5 | 1923.5 | 1923.5 | 1923.5 | 1923.5 | 1923.5 | 1923.5 | 1923.5 | 1923.5 | 1923.5 | 1923.5 |
| 2.5°  | 1905.8 | 1886.8 | 1849.5 | 1807.5 | 1777.7 | 1745.1 | 1726.2 | 1703.1 | 1685.5 | 1669.9 | 1681.4 |
| 5°    | 1898.9 | 1862.4 | 1779.7 | 1686.8 | 1609.0 | 1534.3 | 1478.8 | 1425.9 | 1385.9 | 1360.8 | 1371.1 |
| 7.5°  | 1881.4 | 1827.2 | 1692.9 | 1547.9 | 1420.5 | 1300.6 | 1203.0 | 1115.5 | 1047.8 | 1011.1 | 1022.7 |
| 10°   | 1851.5 | 1775.0 | 1594.8 | 1393.5 | 1215.1 | 1045.7 | 900.7  | 770.6  | 672.3  | 626.2  | 637.1  |
| 12.5° | 1829.8 | 1728.9 | 1493.1 | 1244.3 | 1009.9 | 769.2  | 576.7  | 427.7  | 351.1  | 305.0  | 309.0  |
| 15°   | 1820.3 | 1692.9 | 1398.1 | 1087.0 | 785.5  | 494.1  | 311.7  | 225.7  | 199.2  | 189.7  | 190.4  |
| 17.5° | 1821.8 | 1664.5 | 1308.0 | 923.7  | 559.1  | 284.0  | 191.1  | 172.1  | 168.1  | 166.0  | 166.0  |
| 20°   | 1825.0 | 1636.1 | 1214.5 | 753.6  | 357.9  | 183.0  | 159.3  | 153.3  | 151.2  | 148.4  | 149.1  |
| 22.5° | 1835.2 | 1614.3 | 1120.2 | 582.8  | 220.3  | 149.1  | 140.9  | 135.6  | 132.1  | 128.1  | 128.7  |
| 25°   | 1850.9 | 1598.1 | 1027.4 | 419.5  | 155.1  | 130.2  | 122.7  | 115.3  | 109.1  | 104.4  | 105.0  |
| 27.5° | 1860.3 | 1575.0 | 928.5  | 286.0  | 128.7  | 113.8  | 103.7  | 93.6   | 86.7   | 82.6   | 82.0   |
| 30°   | 1853.6 | 1537.8 | 816.0  | 187.7  | 113.8  | 98.3   | 86.1   | 74.6   | 67.8   | 64.4   | 64.4   |
| 32.5° | 1835.2 | 1489.6 | 692.0  | 136.9  | 101.0  | 84.7   | 69.8   | 59.6   | 54.8   | 52.9   | 53.5   |
| 35°   | 1814.2 | 1439.4 | 559.9  | 115.9  | 90.8   | 71.9   | 57.0   | 48.8   | 46.7   | 46.2   | 46.2   |
| 37.5° | 1802.8 | 1396.1 | 433.1  | 105.0  | 81.3   | 59.6   | 46.7   | 42.0   | 40.0   | 40.0   | 40.0   |
| 40°   | 1815.7 | 1362.9 | 320.5  | 96.8   | 71.9   | 49.4   | 39.3   | 35.9   | 35.3   | 35.3   | 35.3   |
| 42.5° | 1870.5 | 1351.4 | 234.5  | 90.1   | 62.3   | 41.3   | 33.9   | 31.3   | 30.5   | 31.3   | 31.3   |
| 45°   | 1977.6 | 1376.5 | 177.5  | 83.4   | 53.5   | 33.9   | 29.1   | 27.0   | 27.0   | 27.8   | 27.8   |
| 47.5° | 2159.3 | 1440.8 | 145.7  | 76.5   | 44.7   | 28.4   | 25.1   | 23.7   | 23.7   | 24.4   | 24.4   |
| 50°   | 2441.1 | 1560.1 | 130.9  | 69.1   | 37.3   | 24.4   | 21.0   | 20.3   | 20.3   | 21.0   | 21.6   |
| 52.5° | 2869.5 | 1787.2 | 123.3  | 61.7   | 30.5   | 20.3   | 17.6   | 17.0   | 17.6   | 18.2   | 18.2   |
| 55°   | 3345.8 | 2077.9 | 114.5  | 54.2   | 25.7   | 17.0   | 14.3   | 14.3   | 14.9   | 16.3   | 16.3   |
| 57.5° | 3789.8 | 2358.5 | 106.4  | 44.7   | 22.4   | 13.6   | 11.5   | 11.5   | 12.8   | 14.3   | 14.3   |
| 60°   | 4258.9 | 2633.7 | 95.6   | 35.9   | 19.0   | 10.8   | 9.5    | 9.5    | 11.5   | 12.8   | 13.6   |
| 62.5° | 4838.2 | 2953.4 | 81.3   | 28.4   | 14.9   | 8.2    | 6.7    | 8.9    | 10.8   | 12.8   | 12.8   |
| 65°   | 5675.9 | 3351.3 | 63.7   | 22.4   | 11.5   | 6.1    | 5.4    | 8.2    | 10.2   | 12.1   | 12.8   |
| 67.5° | 5980.2 | 3300.6 | 48.1   | 18.2   | 8.9    | 4.8    | 4.8    | 7.5    | 10.2   | 12.1   | 12.1   |
| 68°   | 5869.0 | 3189.3 | 46.2   | 17.6   | 8.2    | 4.8    | 4.8    | 7.5    | 10.2   | 12.1   | 12.1   |
| 70°   | 5114.1 | 2607.2 | 38.0   | 13.6   | 6.7    | 4.0    | 4.0    | 6.7    | 10.2   | 11.5   | 12.1   |
| 72.5° | 3829.1 | 1732.2 | 32.5   | 8.9    | 6.1    | 4.0    | 3.5    | 6.7    | 9.5    | 11.5   | 11.5   |
| 75°   | 2196.4 | 719.1  | 27.8   | 6.7    | 5.4    | 3.5    | 3.5    | 6.1    | 9.5    | 11.5   | 11.5   |
| 77.5° | 620.8  | 168.1  | 22.4   | 5.4    | 4.8    | 3.5    | 2.8    | 6.1    | 8.9    | 10.8   | 10.8   |
| 80°   | 113.8  | 50.1   | 17.6   | 4.8    | 4.0    | 3.5    | 2.8    | 6.1    | 8.9    | 10.8   | 10.8   |
| 82.5° | 75.2   | 23.7   | 12.8   | 4.8    | 4.0    | 3.5    | 2.8    | 5.4    | 8.2    | 10.2   | 10.2   |
| 85°   | 56.2   | 17.0   | 8.2    | 4.8    | 4.0    | 3.5    | 2.8    | 5.4    | 8.2    | 10.2   | 10.2   |
| 87.5° | 31.3   | 7.5    | 6.1    | 5.4    | 4.8    | 3.5    | 2.8    | 4.8    | 7.5    | 9.5    | 9.5    |
| 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)