

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: P195782

Luminaire Tested: **NAV-AF-02-D-UNV-T2-7050**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195782
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24136)
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-T2-7050
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 5000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 11922 lumens
Efficiency: N/A
Efficacy: 105.5 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type II - Medium - Full Cutoff
BUG Rating: B2 - U0 - G2

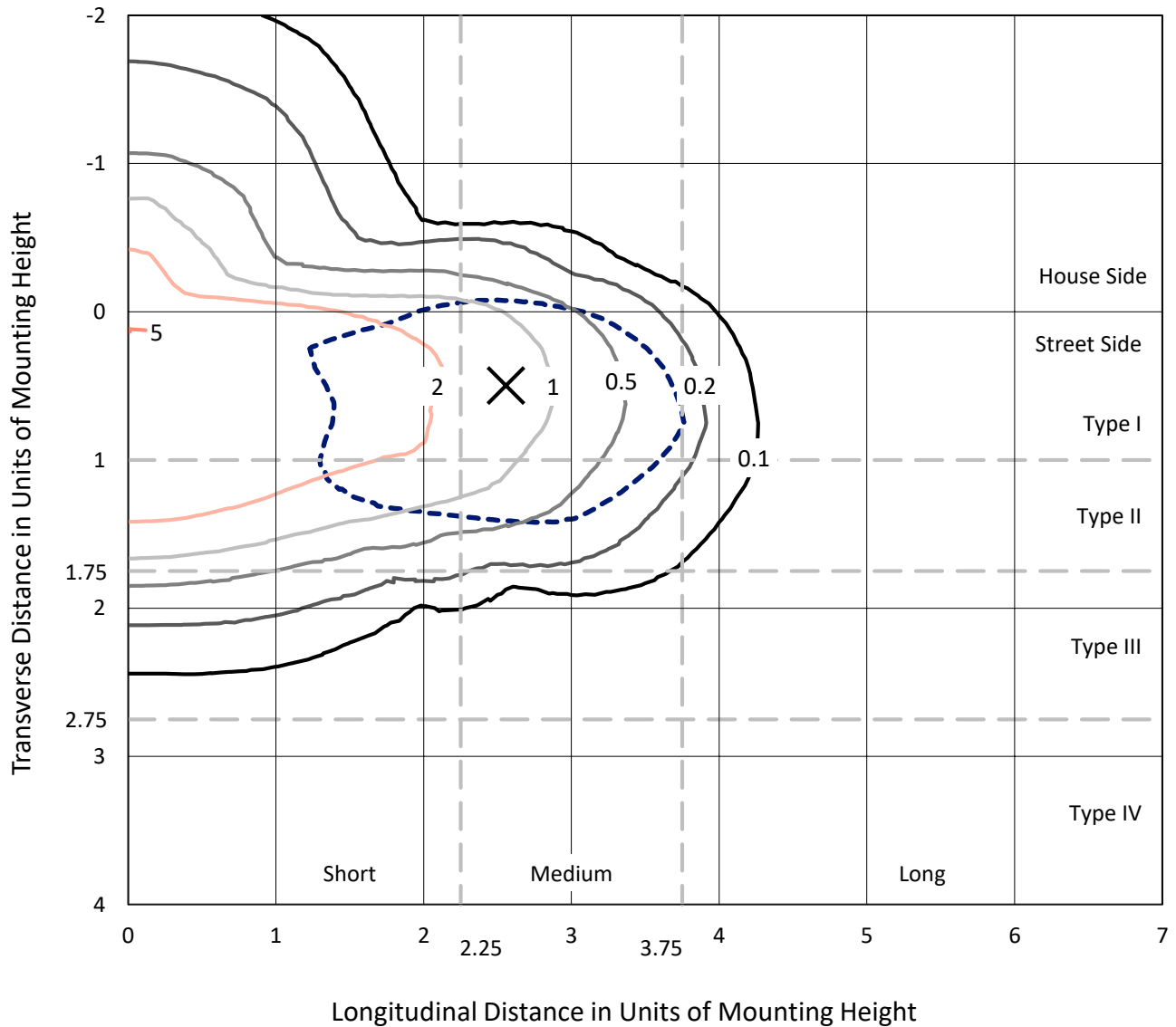
Input Watts (W): 113
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



REPORT NUMBER: P195782
 CATALOG NUMBER: NAV-AF-02-D-UNV-T2-7050

Iso-Footcandle Lines of Horizontal Illumination

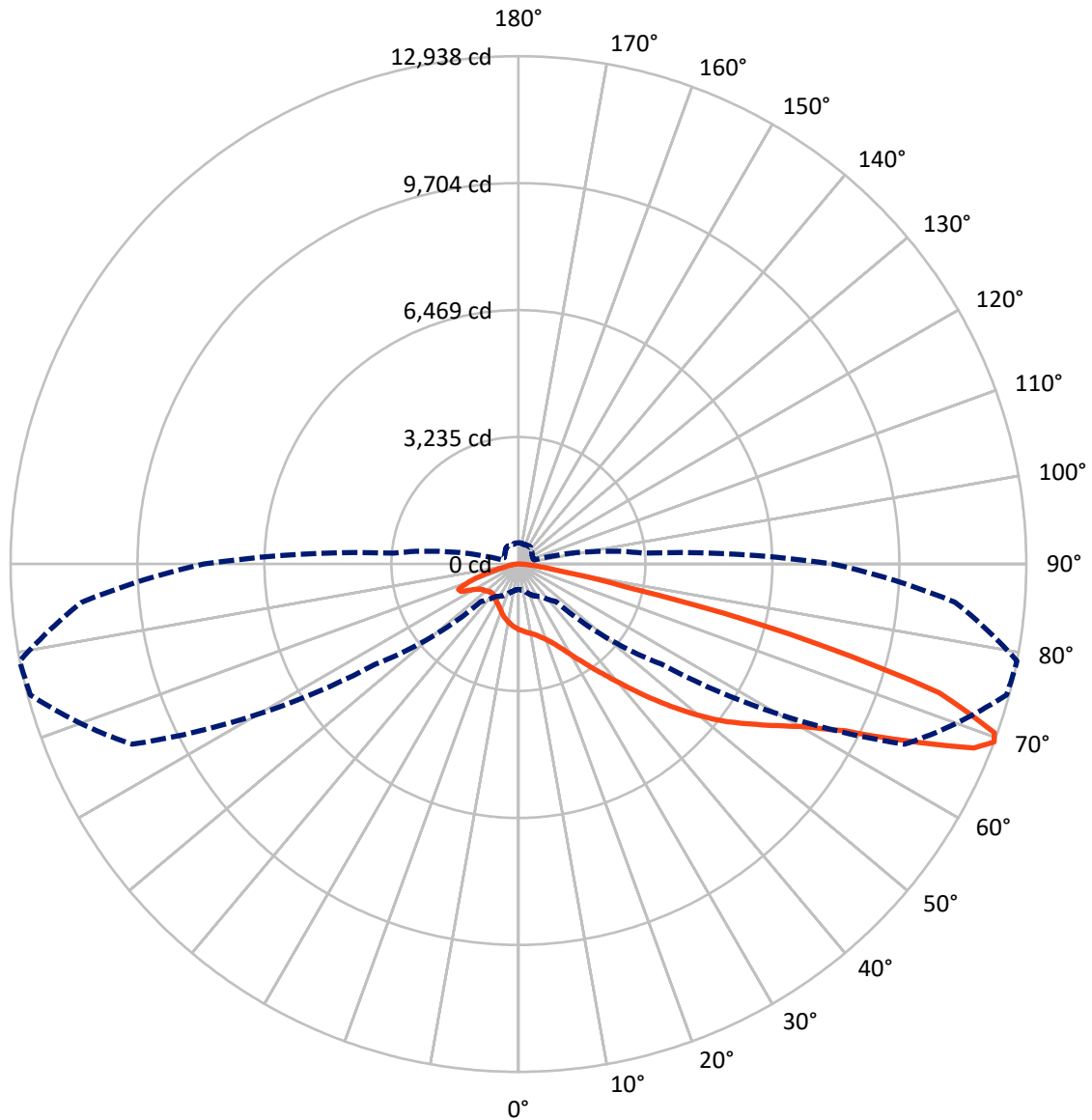
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 5.1 fc
 Type II - Medium - Full Cutoff

REPORT NUMBER: P195782
CATALOG NUMBER: NAV-AF-02-D-UNV-T2-7050

Luminous Intensity Polar Plot



— Vertical Plane Through 79-Deg Lateral - - - Horizontal Cone Through 69-Deg Vertical

REPORT NUMBER: P195782

CATALOG NUMBER: NAV-AF-02-D-UNV-T2-7050

FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 2242.8 | 0.0 | 2242.8 |
| | % Fixture | 18.8 | 0.0 | 18.8 |
| Street Side | Lumens | 9679.3 | 0.0 | 9679.3 |
| | % Fixture | 81.2 | 0.0 | 81.2 |
| Total | Lumens | 11922.0 | 0.0 | 11922.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 155.1 | 1.3 |
| 10°-20° | 444.7 | 3.7 |
| 20°-30° | 734.8 | 6.2 |
| 30°-40° | 1189.8 | 10.0 |
| 40°-50° | 1900.7 | 15.9 |
| 50°-60° | 2722.0 | 22.8 |
| 60°-70° | 3032.7 | 25.4 |
| 70°-80° | 1517.2 | 12.7 |
| 80°-90° | 225.2 | 1.9 |
| 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° | 11922.0 | 100.0 |
| 0°-180° | 11922.0 | 100.0 |

Coefficient of Utilization



REPORT NUMBER: P195782

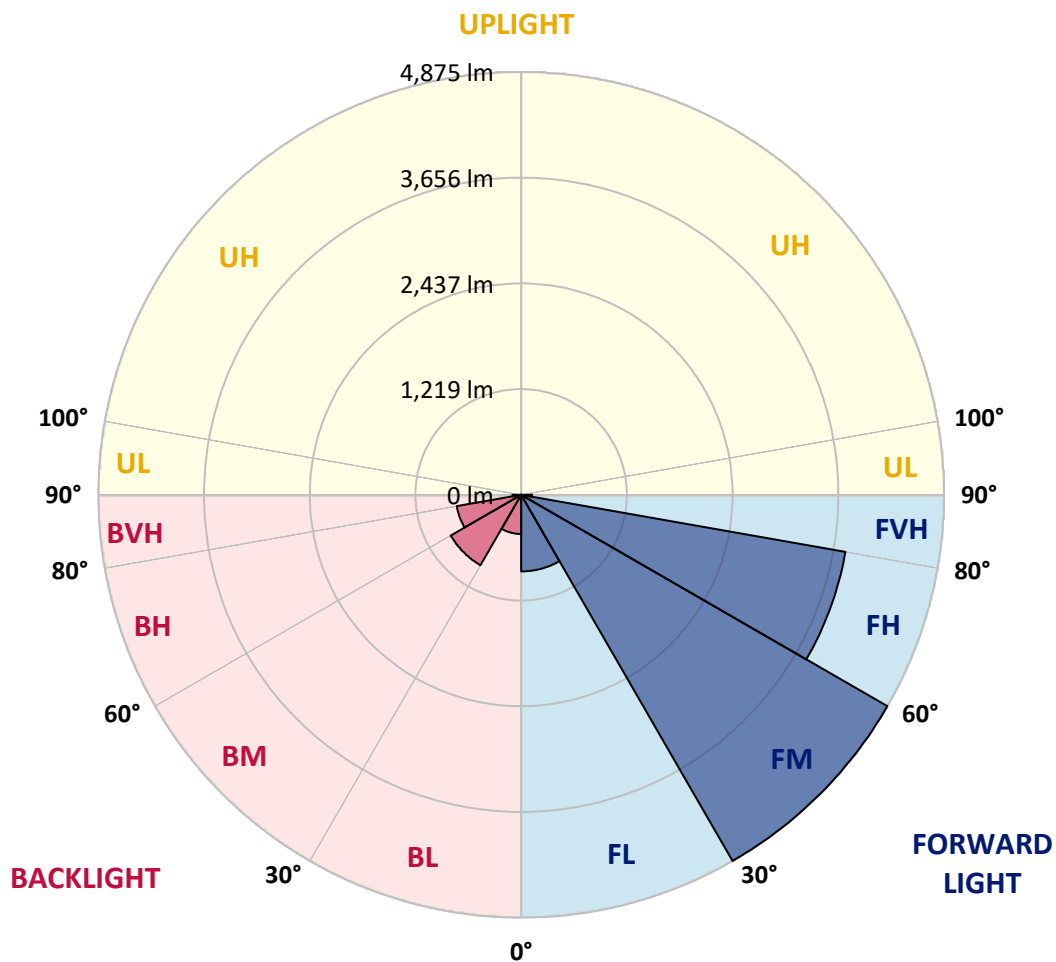
CATALOG NUMBER: NAV-AF-02-D-UNV-T2-7050

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 882.7 | 7.4 | | | |
| FM (30°-60°) | 4874.9 | 40.9 | | | |
| FH (60°-80°) | 3795.8 | 31.8 | | | G2/5000 |
| FVH (80°-90°) | 125.8 | 1.1 | | | G2/225 |
| BL (0°-30°) | 451.8 | 3.8 | B1/500 | | |
| BM (30°-60°) | 937.5 | 7.9 | B1/1000 | | |
| BH (60°-80°) | 754.1 | 6.3 | B2/1000 | | G2/1000 |
| BVH (80°-90°) | 99.3 | 0.8 | | | 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: P195782

CATALOG NUMBER: NAV-AF-02-D-UNV-T2-7050

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 79° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|
| 0° | 1673.0 | 1673.0 | 1673.0 | 1673.0 | 1673.0 | 1673.0 | 1673.0 | 1673.0 | 1673.0 | 1673.0 | 1673.0 |
| 2.5° | 1836.8 | 1832.9 | 1832.1 | 1820.4 | 1814.2 | 1800.9 | 1769.7 | 1737.8 | 1708.1 | 1692.5 | 1676.2 |
| 5° | 1990.5 | 1982.7 | 1978.8 | 1959.3 | 1942.1 | 1912.5 | 1863.3 | 1812.6 | 1759.6 | 1732.3 | 1699.6 |
| 7.5° | 2083.3 | 2084.1 | 2084.1 | 2068.5 | 2051.3 | 2015.4 | 1953.0 | 1883.6 | 1804.8 | 1769.0 | 1717.5 |
| 10° | 2091.1 | 2091.9 | 2103.6 | 2107.5 | 2111.4 | 2092.7 | 2034.9 | 1947.6 | 1846.2 | 1799.4 | 1732.3 |
| 12.5° | 2013.9 | 2019.3 | 2038.8 | 2066.9 | 2106.7 | 2127.0 | 2102.0 | 2016.2 | 1899.2 | 1842.3 | 1760.4 |
| 15° | 1910.1 | 1915.6 | 1940.6 | 1983.5 | 2047.4 | 2115.3 | 2150.4 | 2095.0 | 1968.6 | 1901.6 | 1801.7 |
| 17.5° | 1859.4 | 1865.7 | 1882.8 | 1917.2 | 1979.6 | 2070.8 | 2176.1 | 2179.2 | 2050.5 | 1973.3 | 1850.9 |
| 20° | 1835.3 | 1839.9 | 1861.8 | 1889.9 | 1937.4 | 2024.8 | 2178.5 | 2268.1 | 2148.0 | 2058.3 | 1910.9 |
| 22.5° | 1890.6 | 1892.2 | 1903.1 | 1918.7 | 1950.7 | 2017.8 | 2176.9 | 2360.2 | 2269.7 | 2165.2 | 1988.1 |
| 25° | 2052.9 | 2042.7 | 2034.9 | 2015.4 | 2023.2 | 2070.8 | 2201.9 | 2458.5 | 2425.7 | 2305.6 | 2091.1 |
| 27.5° | 2244.8 | 2243.2 | 2222.9 | 2177.7 | 2148.8 | 2179.2 | 2272.8 | 2568.4 | 2616.8 | 2484.2 | 2226.0 |
| 30° | 2458.5 | 2459.2 | 2438.2 | 2382.8 | 2324.3 | 2327.4 | 2385.9 | 2695.6 | 2845.3 | 2699.5 | 2392.2 |
| 32.5° | 2682.3 | 2696.4 | 2657.4 | 2602.0 | 2531.0 | 2508.4 | 2548.2 | 2849.2 | 3109.7 | 2953.7 | 2584.8 |
| 35° | 2949.8 | 2952.2 | 2909.3 | 2828.2 | 2757.2 | 2721.3 | 2758.0 | 3041.1 | 3414.7 | 3252.5 | 2819.6 |
| 37.5° | 3227.5 | 3229.1 | 3184.6 | 3080.9 | 2991.2 | 2967.8 | 3008.3 | 3274.3 | 3737.6 | 3592.5 | 3095.7 |
| 40° | 3454.5 | 3470.9 | 3435.8 | 3338.3 | 3247.8 | 3233.8 | 3292.2 | 3553.5 | 4150.2 | 3995.0 | 3424.1 |
| 42.5° | 3711.9 | 3730.6 | 3688.5 | 3587.1 | 3515.3 | 3510.6 | 3601.9 | 3871.8 | 4560.5 | 4460.6 | 3796.1 |
| 45° | 4002.0 | 4028.5 | 3970.0 | 3856.2 | 3795.3 | 3898.3 | 3903.7 | 4224.3 | 5033.1 | 4981.7 | 4215.0 |
| 47.5° | 4318.7 | 4340.5 | 4292.9 | 4170.5 | 4104.2 | 4253.2 | 4199.4 | 4605.7 | 5544.0 | 5540.1 | 4668.1 |
| 50° | 4562.8 | 4587.0 | 4591.7 | 4537.9 | 4468.4 | 4487.2 | 4523.8 | 5006.6 | 6053.3 | 6114.2 | 5136.9 |
| 52.5° | 4518.4 | 4541.8 | 4647.1 | 4788.2 | 4899.8 | 4851.4 | 4895.9 | 5432.5 | 6545.5 | 6674.2 | 5582.2 |
| 55° | 4159.6 | 4172.1 | 4369.4 | 4704.8 | 5179.8 | 5410.6 | 5413.8 | 5895.8 | 7013.5 | 7193.7 | 6005.0 |
| 57.5° | 3513.0 | 3514.5 | 3771.1 | 4265.7 | 5016.8 | 5773.3 | 6231.2 | 6477.6 | 7501.7 | 7767.7 | 6529.1 |
| 60° | 2485.8 | 2492.0 | 2790.7 | 3437.3 | 4432.6 | 5729.7 | 7110.2 | 7518.9 | 8067.2 | 8412.7 | 7204.6 |
| 62.5° | 1475.7 | 1489.7 | 1715.2 | 2233.8 | 3292.2 | 5168.1 | 7629.7 | 9371.3 | 8900.2 | 9358.8 | 8285.6 |
| 65° | 960.1 | 971.8 | 1106.8 | 1367.3 | 1945.2 | 3760.2 | 7458.8 | 11165.3 | 10476.5 | 10847.0 | 9839.3 |
| 67.5° | 739.4 | 748.8 | 854.8 | 1012.4 | 1193.4 | 2032.6 | 5963.6 | 11541.2 | 12395.3 | 12510.7 | 11150.4 |
| 69° | 649.7 | 657.5 | 735.5 | 886.8 | 1004.6 | 1345.4 | 4444.3 | 10858.7 | 12874.9 | 12938.1 | 11166.8 |
| 70° | 602.1 | 608.4 | 681.7 | 812.7 | 922.7 | 1074.0 | 3401.4 | 10066.3 | 12699.5 | 12860.9 | 10844.7 |
| 72.5° | 496.1 | 501.5 | 553.8 | 654.4 | 754.2 | 765.1 | 1506.9 | 7350.4 | 10693.4 | 11209.7 | 9177.1 |
| 75° | 414.2 | 417.3 | 451.6 | 524.9 | 610.7 | 609.2 | 769.8 | 4163.5 | 6525.2 | 7140.6 | 5666.5 |
| 77.5° | 345.5 | 347.9 | 370.5 | 415.7 | 482.0 | 479.7 | 542.1 | 1797.0 | 2881.2 | 2779.8 | 1950.7 |
| 80° | 305.0 | 306.5 | 318.2 | 329.9 | 372.0 | 369.7 | 401.7 | 825.2 | 1172.3 | 1083.4 | 737.9 |
| 82.5° | 231.7 | 234.8 | 294.0 | 299.5 | 288.6 | 278.4 | 280.0 | 480.5 | 600.6 | 546.8 | 396.2 |
| 85° | 131.0 | 131.8 | 188.8 | 220.7 | 251.1 | 188.8 | 181.7 | 248.0 | 296.4 | 259.7 | 173.2 |
| 87.5° | 58.5 | 60.8 | 90.5 | 104.5 | 135.7 | 110.8 | 103.7 | 105.3 | 127.9 | 106.1 | 68.6 |
| 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: P195782

CATALOG NUMBER: NAV-AF-02-D-UNV-T2-7050

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1673.0 | 1673.0 | 1673.0 | 1673.0 | 1673.0 | 1673.0 | 1673.0 | 1673.0 | 1673.0 | 1673.0 | 1673.0 |
| 2.5° | 1660.6 | 1647.3 | 1616.1 | 1584.1 | 1552.1 | 1531.9 | 1510.8 | 1491.3 | 1483.5 | 1482.7 | 1467.9 |
| 5° | 1667.6 | 1636.4 | 1565.4 | 1487.4 | 1413.3 | 1355.6 | 1307.2 | 1276.0 | 1245.6 | 1240.2 | 1226.9 |
| 7.5° | 1669.9 | 1619.2 | 1503.8 | 1379.0 | 1265.9 | 1186.3 | 1138.0 | 1116.9 | 1102.1 | 1098.2 | 1093.5 |
| 10° | 1669.1 | 1597.4 | 1435.1 | 1264.3 | 1135.6 | 1075.6 | 1057.6 | 1062.3 | 1068.6 | 1071.7 | 1071.7 |
| 12.5° | 1681.6 | 1587.2 | 1366.5 | 1156.7 | 1051.4 | 1022.5 | 1036.6 | 1060.8 | 1079.5 | 1087.3 | 1088.8 |
| 15° | 1704.2 | 1581.0 | 1290.8 | 1063.1 | 992.1 | 999.1 | 1033.5 | 1068.6 | 1095.1 | 1106.8 | 1109.9 |
| 17.5° | 1732.3 | 1572.4 | 1203.5 | 985.9 | 957.8 | 982.0 | 1026.4 | 1070.9 | 1102.9 | 1117.7 | 1120.0 |
| 20° | 1763.5 | 1559.9 | 1113.0 | 928.2 | 927.4 | 957.8 | 1002.3 | 1052.2 | 1086.5 | 1102.9 | 1102.1 |
| 22.5° | 1805.6 | 1548.2 | 1028.8 | 886.0 | 893.8 | 921.9 | 958.6 | 1003.8 | 1035.8 | 1050.6 | 1047.5 |
| 25° | 1861.8 | 1537.3 | 953.1 | 848.6 | 855.6 | 874.3 | 900.1 | 934.4 | 957.0 | 964.8 | 959.4 |
| 27.5° | 1937.4 | 1528.7 | 893.8 | 814.3 | 813.5 | 822.1 | 837.7 | 856.4 | 867.3 | 865.0 | 856.4 |
| 30° | 2030.3 | 1520.2 | 850.2 | 783.9 | 772.9 | 772.2 | 779.2 | 790.1 | 797.1 | 783.1 | 776.1 |
| 32.5° | 2134.0 | 1505.3 | 811.2 | 757.3 | 737.9 | 730.8 | 734.0 | 748.8 | 777.6 | 763.6 | 758.1 |
| 35° | 2256.5 | 1488.2 | 772.2 | 728.5 | 713.7 | 700.4 | 702.8 | 734.7 | 822.1 | 811.9 | 806.5 |
| 37.5° | 2403.9 | 1472.6 | 736.3 | 697.3 | 696.5 | 680.1 | 678.6 | 716.8 | 833.8 | 811.9 | 807.3 |
| 40° | 2580.9 | 1469.5 | 704.3 | 663.0 | 675.5 | 669.2 | 663.8 | 687.2 | 769.0 | 724.6 | 716.0 |
| 42.5° | 2794.6 | 1483.5 | 680.9 | 630.2 | 651.3 | 666.1 | 656.0 | 661.4 | 695.0 | 655.2 | 648.2 |
| 45° | 3044.2 | 1521.7 | 663.8 | 601.4 | 625.5 | 663.8 | 652.1 | 647.4 | 652.8 | 631.0 | 626.3 |
| 47.5° | 3335.1 | 1589.6 | 652.1 | 577.2 | 601.4 | 657.5 | 650.5 | 641.1 | 638.8 | 626.3 | 623.2 |
| 50° | 3646.4 | 1680.8 | 644.3 | 555.3 | 579.5 | 646.6 | 649.7 | 636.5 | 632.6 | 627.1 | 625.5 |
| 52.5° | 3955.2 | 1779.9 | 634.9 | 536.6 | 561.6 | 633.3 | 650.5 | 631.8 | 626.3 | 623.2 | 621.6 |
| 55° | 4262.5 | 1882.8 | 617.7 | 520.2 | 548.3 | 617.7 | 649.7 | 625.5 | 619.3 | 619.3 | 619.3 |
| 57.5° | 4661.1 | 2039.6 | 595.1 | 507.0 | 531.2 | 597.5 | 639.6 | 618.5 | 609.9 | 610.7 | 611.5 |
| 60° | 5236.7 | 2302.5 | 570.2 | 492.2 | 508.5 | 574.1 | 624.0 | 606.0 | 595.9 | 599.0 | 599.8 |
| 62.5° | 6198.4 | 2761.9 | 535.8 | 471.1 | 485.1 | 549.1 | 603.7 | 588.9 | 579.5 | 585.0 | 585.8 |
| 65° | 7480.7 | 3318.0 | 490.6 | 444.6 | 461.0 | 521.0 | 578.0 | 568.6 | 558.5 | 571.7 | 570.9 |
| 67.5° | 8263.0 | 3481.0 | 443.0 | 416.5 | 437.6 | 491.4 | 546.0 | 542.1 | 535.1 | 558.5 | 556.9 |
| 69° | 8006.4 | 3186.2 | 415.7 | 398.6 | 421.2 | 471.1 | 525.7 | 524.1 | 518.7 | 541.3 | 539.7 |
| 70° | 7607.8 | 2910.8 | 398.6 | 386.9 | 412.6 | 458.6 | 512.4 | 512.4 | 507.0 | 526.5 | 522.6 |
| 72.5° | 6111.1 | 2159.0 | 358.8 | 357.2 | 383.0 | 424.3 | 476.6 | 480.5 | 477.3 | 484.4 | 480.5 |
| 75° | 3587.9 | 1301.0 | 319.8 | 324.5 | 347.1 | 387.6 | 436.8 | 439.9 | 436.8 | 436.0 | 436.8 |
| 77.5° | 1244.1 | 583.4 | 282.3 | 289.4 | 308.9 | 350.2 | 393.1 | 399.3 | 394.7 | 389.2 | 390.8 |
| 80° | 486.7 | 339.3 | 241.8 | 251.9 | 268.3 | 308.1 | 349.4 | 353.3 | 346.3 | 345.5 | 339.3 |
| 82.5° | 292.5 | 206.7 | 188.0 | 204.4 | 224.6 | 267.5 | 301.8 | 300.3 | 294.8 | 326.8 | 286.2 |
| 85° | 127.1 | 114.7 | 137.3 | 153.7 | 163.8 | 200.5 | 255.0 | 248.0 | 234.8 | 206.7 | 202.0 |
| 87.5° | 51.5 | 59.3 | 75.7 | 91.3 | 98.3 | 129.5 | 174.7 | 168.5 | 170.8 | 140.4 | 139.6 |
| 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)