

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: P196362

Luminaire Tested: **NAV-AF-06-D-UNV-T4FT**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196362
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24256)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-06-D-UNV-T4FT
Description: NAVION ROADWAY AND AREA LUMINAIRE
(6) 70 CRI, 4000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV FORWARD THROW OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 37140.3 lumens
Efficiency: N/A
Efficacy: 111.5 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B3 - U0 - G5

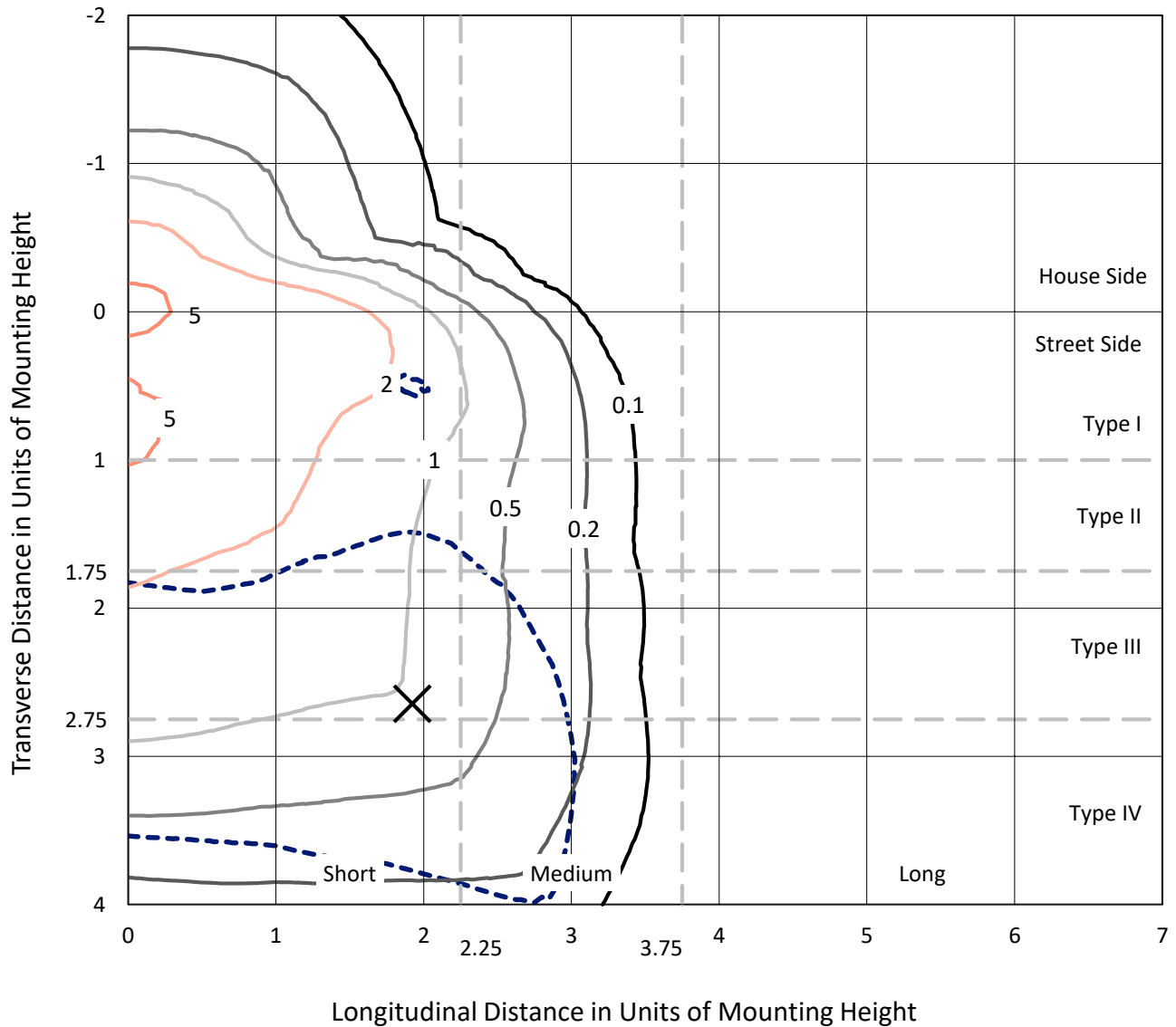
Input Watts (W): 333
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

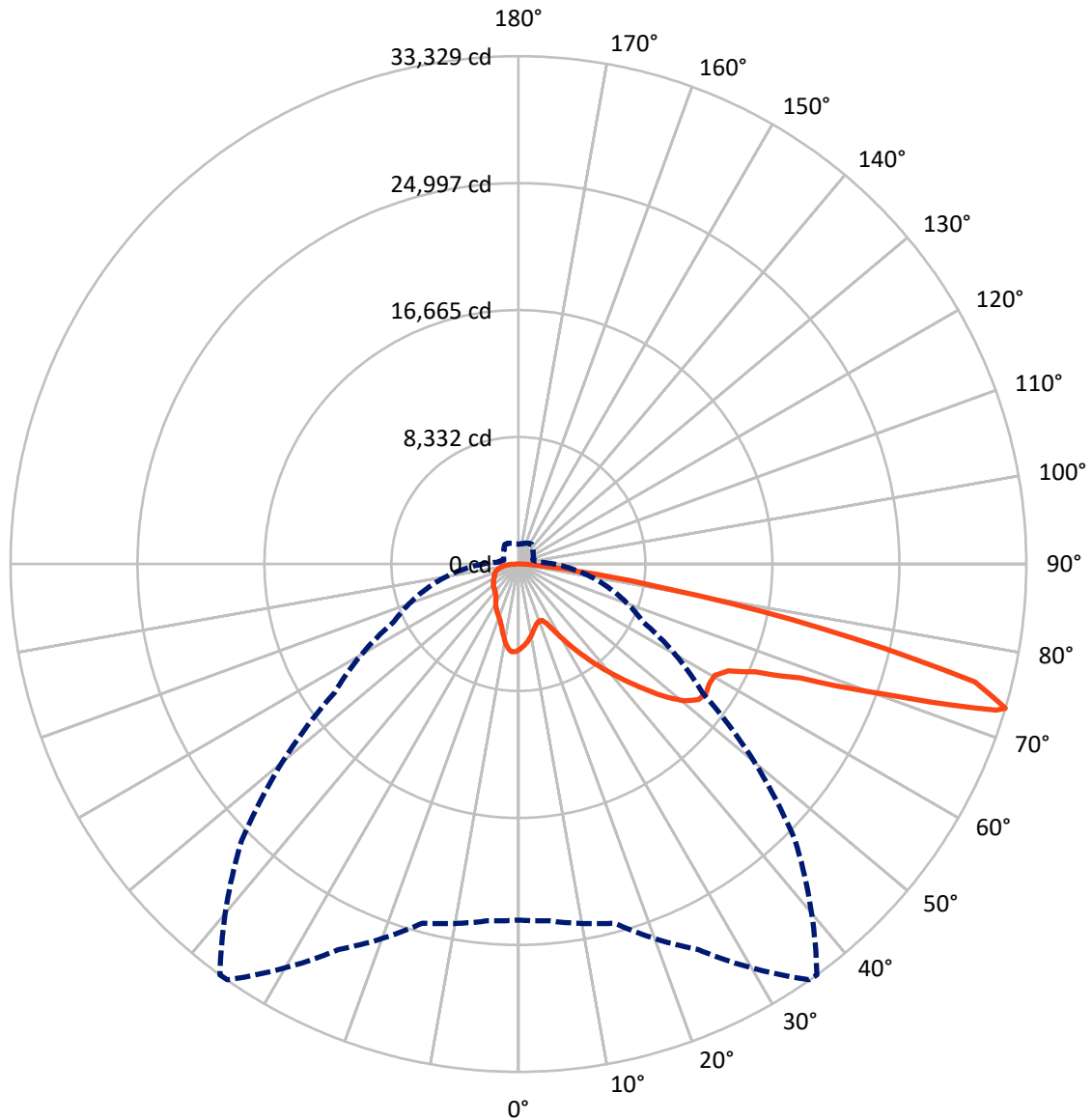
× Max cd
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 6.3 fc
 Type IV - Short - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 36-Deg Lateral - - - Horizontal Cone Through 73-Deg Vertical

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FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 7161.8 | 0.0 | 7161.8 |
| | % Fixture | 19.3 | 0.0 | 19.3 |
| Street Side | Lumens | 29978.5 | 0.0 | 29978.5 |
| | % Fixture | 80.7 | 0.0 | 80.7 |
| Total | Lumens | 37140.3 | 0.0 | 37140.3 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 511.0 | 1.4 |
| 10°-20° | 1283.3 | 3.5 |
| 20°-30° | 2057.5 | 5.5 |
| 30°-40° | 3403.3 | 9.2 |
| 40°-50° | 5266.2 | 14.2 |
| 50°-60° | 7049.9 | 19.0 |
| 60°-70° | 9209.4 | 24.8 |
| 70°-80° | 7522.4 | 20.3 |
| 80°-90° | 837.3 | 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° | 37140.3 | 100.0 |
| 0°-180° | 37140.3 | 100.0 |



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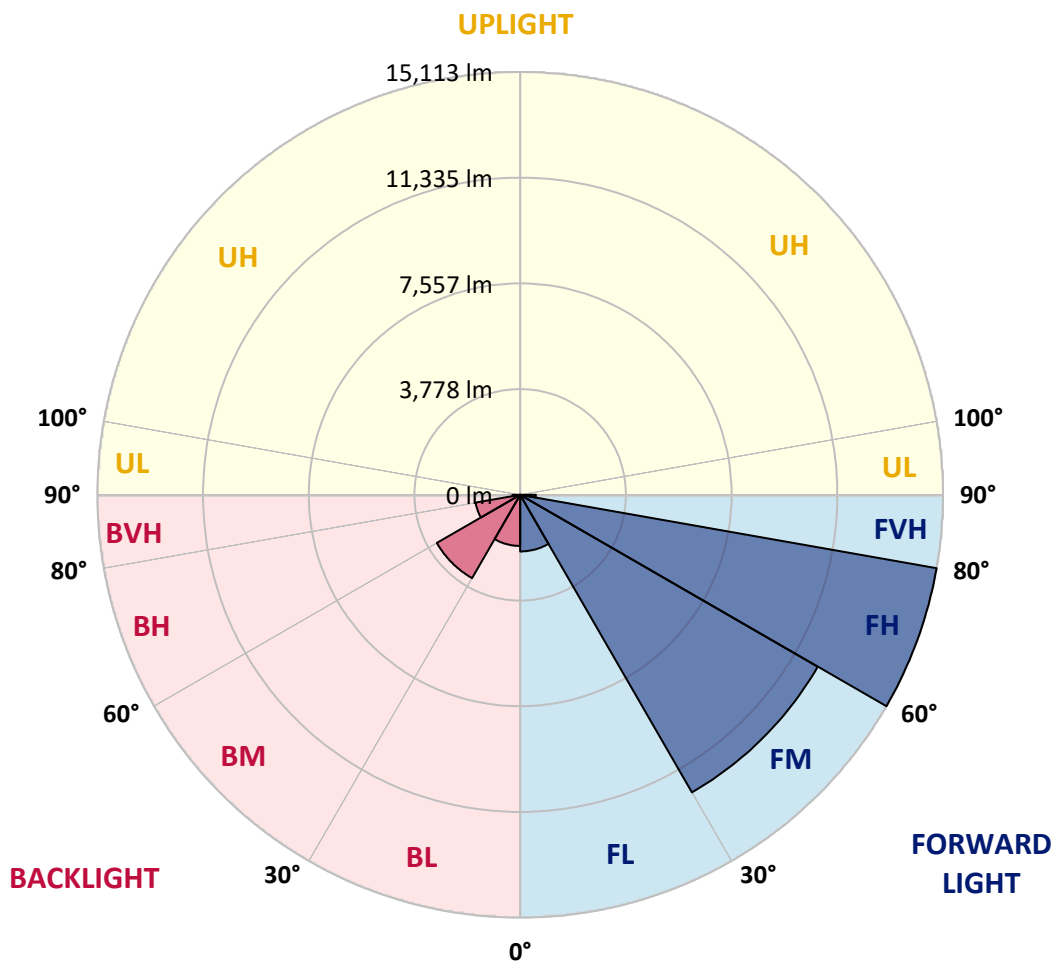
CATALOG NUMBER: NAV-AF-06-D-UNV-T4FT

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|---------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 2023.7 | 5.4 | | | |
| FM (30°-60°) | 12279.9 | 33.1 | | | |
| FH (60°-80°) | 15113.4 | 40.7 | | | G5 |
| FVH (80°-90°) | 561.5 | 1.5 | | | G4/750 |
| BL (0°-30°) | 1828.1 | 4.9 | B3/2500 | | |
| BM (30°-60°) | 3439.5 | 9.3 | B3/5000 | | |
| BH (60°-80°) | 1618.4 | 4.4 | B3/2500 | | G3/2500 |
| BVH (80°-90°) | 275.8 | 0.7 | | | G3/500 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B3-U0-G5

Type IV Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 36° | 45° | 55° | 65° | 75° | 85° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 5625.7 | 5625.7 | 5625.7 | 5625.7 | 5625.7 | 5625.7 | 5625.7 | 5625.7 | 5625.7 | 5625.7 | 5625.7 |
| 2.5° | 5410.9 | 5425.1 | 5427.5 | 5443.9 | 5443.9 | 5441.6 | 5448.6 | 5477.0 | 5491.2 | 5524.2 | 5552.5 |
| 5° | 5144.3 | 5160.8 | 5167.8 | 5196.2 | 5231.6 | 5233.9 | 5259.9 | 5314.2 | 5366.1 | 5439.2 | 5500.6 |
| 7.5° | 4844.6 | 4863.5 | 4882.3 | 4941.4 | 4993.2 | 4997.9 | 5047.5 | 5134.8 | 5203.2 | 5293.0 | 5403.8 |
| 10° | 4554.4 | 4559.1 | 4577.9 | 4653.4 | 4721.8 | 4729.0 | 4799.8 | 4898.9 | 4990.9 | 5116.0 | 5241.0 |
| 12.5° | 4316.0 | 4330.2 | 4325.4 | 4382.1 | 4441.0 | 4445.7 | 4540.2 | 4665.3 | 4799.8 | 4941.4 | 5090.0 |
| 15° | 4233.4 | 4231.0 | 4181.5 | 4179.2 | 4205.1 | 4209.9 | 4301.8 | 4448.2 | 4599.2 | 4773.8 | 4964.9 |
| 17.5° | 4290.1 | 4271.1 | 4141.4 | 4061.1 | 4044.6 | 4049.4 | 4117.8 | 4278.3 | 4438.7 | 4639.3 | 4868.2 |
| 20° | 4601.5 | 4528.4 | 4224.0 | 4030.4 | 3976.2 | 3976.2 | 4016.3 | 4146.1 | 4323.1 | 4556.7 | 4844.6 |
| 22.5° | 5340.1 | 5226.9 | 4577.9 | 4233.4 | 4042.3 | 4023.4 | 3992.7 | 4091.8 | 4287.7 | 4568.5 | 4941.4 |
| 25° | 6269.9 | 6215.7 | 5226.9 | 4773.8 | 4379.8 | 4318.4 | 4115.4 | 4150.8 | 4360.8 | 4696.0 | 5205.6 |
| 27.5° | 7131.2 | 7036.8 | 6078.8 | 5559.6 | 5002.7 | 4908.3 | 4478.8 | 4334.9 | 4535.5 | 4932.0 | 5587.9 |
| 30° | 7633.9 | 7570.1 | 6954.2 | 6458.7 | 5795.5 | 5675.2 | 5059.3 | 4698.3 | 4846.9 | 5321.3 | 6130.6 |
| 32.5° | 8181.3 | 8143.5 | 7832.0 | 7381.3 | 6654.5 | 6515.3 | 5809.7 | 5290.6 | 5323.6 | 5838.1 | 6784.3 |
| 35° | 8712.3 | 8761.8 | 8584.8 | 8254.5 | 7579.6 | 7449.7 | 6817.4 | 6064.6 | 5911.2 | 6418.5 | 7482.8 |
| 37.5° | 9349.4 | 9361.1 | 9250.2 | 9035.5 | 8551.8 | 8445.6 | 7924.1 | 6890.5 | 6550.7 | 7036.8 | 8157.7 |
| 40° | 10621.3 | 10434.9 | 10000.7 | 9830.8 | 9542.9 | 9476.8 | 8882.2 | 7648.0 | 7145.3 | 7671.6 | 8794.8 |
| 42.5° | 11997.1 | 11706.8 | 11027.2 | 10748.8 | 10633.1 | 10571.7 | 9679.8 | 8153.0 | 7702.3 | 8306.4 | 9420.1 |
| 45° | 13106.1 | 12870.2 | 12204.7 | 11860.2 | 11874.3 | 11775.2 | 10375.9 | 8603.7 | 8306.4 | 8943.5 | 10118.6 |
| 47.5° | 14198.7 | 13804.6 | 13058.9 | 13009.4 | 13174.6 | 13028.2 | 11041.3 | 9054.4 | 8936.4 | 9637.2 | 10817.2 |
| 50° | 14269.4 | 13910.8 | 13608.7 | 14005.2 | 14288.4 | 14106.7 | 11645.4 | 9644.4 | 9590.1 | 10477.4 | 11718.6 |
| 52.5° | 13408.1 | 13356.3 | 13816.4 | 14484.3 | 14953.8 | 14790.9 | 12138.6 | 10250.8 | 10257.8 | 11527.4 | 12815.8 |
| 55° | 13094.3 | 13028.2 | 13580.4 | 14401.6 | 15036.4 | 14939.7 | 12506.7 | 10935.1 | 10998.9 | 12801.7 | 13993.4 |
| 57.5° | 13622.9 | 13457.7 | 13566.3 | 14245.9 | 14842.9 | 14786.2 | 12889.0 | 11695.0 | 11810.6 | 14269.4 | 15081.3 |
| 60° | 15262.9 | 14925.5 | 14349.7 | 14477.1 | 14850.0 | 14816.9 | 13436.5 | 12542.1 | 12735.6 | 15798.6 | 15770.3 |
| 62.5° | 17719.5 | 17337.2 | 16164.4 | 15598.1 | 15515.4 | 15451.7 | 14340.2 | 13582.7 | 13679.5 | 16902.9 | 15369.1 |
| 65° | 20414.3 | 20003.7 | 18609.1 | 17681.7 | 17195.6 | 17058.7 | 15798.6 | 14838.2 | 14231.7 | 16900.6 | 13807.0 |
| 67.5° | 23439.5 | 23005.3 | 21615.5 | 20730.5 | 20204.3 | 19970.7 | 18165.5 | 15852.9 | 14052.4 | 15470.6 | 11048.4 |
| 70° | 26537.9 | 26124.9 | 25487.7 | 25796.9 | 26028.2 | 25671.9 | 21893.9 | 16190.3 | 12764.0 | 12129.1 | 7419.1 |
| 72.5° | 24893.1 | 24860.1 | 25343.8 | 28274.7 | 32732.3 | 32803.1 | 25617.6 | 15237.0 | 9861.5 | 7209.0 | 3954.9 |
| 73° | 23366.3 | 23505.6 | 24402.3 | 27908.9 | 33305.6 | 33329.3 | 25690.7 | 14743.8 | 9054.4 | 6210.8 | 3473.5 |
| 75° | 12105.6 | 13049.5 | 16376.7 | 22630.1 | 30839.7 | 30950.6 | 22646.6 | 11161.7 | 5396.8 | 3450.0 | 2340.9 |
| 77.5° | 3242.3 | 3199.8 | 5276.4 | 11024.9 | 20560.6 | 20414.3 | 14309.5 | 5403.8 | 2586.3 | 2164.0 | 1642.3 |
| 80° | 1111.4 | 1125.7 | 1795.8 | 4032.9 | 9597.1 | 9939.3 | 6210.8 | 2357.4 | 1701.4 | 1507.9 | 1163.4 |
| 82.5° | 566.3 | 585.2 | 939.2 | 1715.6 | 4014.0 | 3929.1 | 1998.7 | 1387.5 | 1139.8 | 915.5 | 651.3 |
| 85° | 302.1 | 311.5 | 516.8 | 889.7 | 1472.5 | 1489.0 | 703.2 | 740.9 | 724.5 | 519.1 | 320.9 |
| 87.5° | 148.6 | 153.3 | 247.8 | 391.7 | 545.1 | 526.2 | 245.4 | 320.9 | 356.3 | 292.6 | 177.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



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CATALOG NUMBER: NAV-AF-06-D-UNV-T4FT

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 5625.7 | 5625.7 | 5625.7 | 5625.7 | 5625.7 | 5625.7 | 5625.7 | 5625.7 | 5625.7 | 5625.7 | 5625.7 |
| 2.5° | 5587.9 | 5587.9 | 5618.6 | 5670.5 | 5708.3 | 5743.7 | 5767.3 | 5805.0 | 5826.2 | 5823.9 | 5821.5 |
| 5° | 5550.1 | 5573.8 | 5635.1 | 5698.9 | 5741.3 | 5769.6 | 5769.6 | 5786.1 | 5786.1 | 5779.1 | 5769.6 |
| 7.5° | 5462.9 | 5503.0 | 5592.7 | 5649.2 | 5661.1 | 5630.4 | 5569.0 | 5521.9 | 5462.9 | 5432.2 | 5420.4 |
| 10° | 5323.6 | 5375.5 | 5488.8 | 5514.7 | 5453.5 | 5344.8 | 5196.2 | 5068.7 | 4955.5 | 4903.6 | 4887.0 |
| 12.5° | 5186.8 | 5255.2 | 5361.4 | 5321.3 | 5175.0 | 4962.5 | 4733.7 | 4559.1 | 4431.6 | 4382.1 | 4365.5 |
| 15° | 5073.5 | 5156.1 | 5238.6 | 5113.6 | 4858.7 | 4563.8 | 4311.3 | 4148.5 | 4051.7 | 4014.0 | 4004.5 |
| 17.5° | 4997.9 | 5094.7 | 5123.0 | 4889.4 | 4535.5 | 4205.1 | 3980.9 | 3874.7 | 3832.3 | 3815.7 | 3811.0 |
| 20° | 5002.7 | 5111.3 | 5042.8 | 4672.3 | 4224.0 | 3891.2 | 3742.6 | 3711.9 | 3711.9 | 3711.9 | 3709.5 |
| 22.5° | 5132.5 | 5226.9 | 5009.8 | 4469.4 | 3924.2 | 3627.0 | 3563.2 | 3589.2 | 3608.0 | 3608.0 | 3605.7 |
| 25° | 5401.5 | 5453.5 | 5033.3 | 4273.5 | 3643.4 | 3398.0 | 3400.4 | 3450.0 | 3466.5 | 3466.5 | 3461.8 |
| 27.5° | 5812.1 | 5769.6 | 5075.9 | 4056.4 | 3367.3 | 3190.4 | 3223.4 | 3268.2 | 3280.1 | 3273.0 | 3270.7 |
| 30° | 6326.5 | 6156.6 | 5111.3 | 3801.6 | 3107.8 | 2996.9 | 3025.2 | 3051.2 | 3041.7 | 3025.2 | 3022.8 |
| 32.5° | 6902.3 | 6550.7 | 5090.0 | 3516.1 | 2878.9 | 2796.3 | 2812.8 | 2827.0 | 2812.8 | 2772.7 | 2772.7 |
| 35° | 7473.4 | 6907.1 | 4974.4 | 3204.6 | 2697.2 | 2602.8 | 2600.4 | 2645.2 | 2642.9 | 2595.7 | 2598.1 |
| 37.5° | 7973.6 | 7187.9 | 4750.2 | 2919.0 | 2541.4 | 2461.2 | 2470.6 | 2499.0 | 2513.2 | 2449.5 | 2442.4 |
| 40° | 8410.2 | 7381.3 | 4434.0 | 2675.9 | 2416.4 | 2421.1 | 2395.1 | 2350.3 | 2333.8 | 2305.5 | 2300.7 |
| 42.5° | 8820.8 | 7515.8 | 4098.9 | 2473.0 | 2352.7 | 2407.0 | 2319.6 | 2213.5 | 2168.7 | 2194.5 | 2211.1 |
| 45° | 9224.4 | 7666.9 | 3775.6 | 2305.5 | 2272.5 | 2364.4 | 2244.1 | 2126.1 | 2074.2 | 2086.0 | 2102.6 |
| 47.5° | 9717.5 | 7876.9 | 3386.3 | 2126.1 | 2149.7 | 2286.6 | 2196.9 | 2069.5 | 1991.7 | 1944.4 | 1930.3 |
| 50° | 10366.5 | 8181.3 | 2881.2 | 1932.7 | 2019.9 | 2201.7 | 2156.8 | 1986.9 | 1902.0 | 1807.6 | 1784.0 |
| 52.5° | 11178.2 | 8469.2 | 2371.6 | 1776.9 | 1913.7 | 2128.6 | 2090.7 | 1916.1 | 1812.3 | 1699.0 | 1680.2 |
| 55° | 11987.6 | 8509.3 | 1932.7 | 1642.3 | 1793.4 | 2029.4 | 2010.5 | 1859.5 | 1713.2 | 1621.2 | 1602.2 |
| 57.5° | 12554.0 | 8129.4 | 1637.6 | 1529.1 | 1677.7 | 1906.7 | 1937.4 | 1791.1 | 1630.6 | 1559.8 | 1548.0 |
| 60° | 12563.4 | 7220.9 | 1458.3 | 1453.6 | 1590.5 | 1800.5 | 1861.9 | 1710.8 | 1578.7 | 1531.5 | 1522.0 |
| 62.5° | 11565.2 | 5819.2 | 1342.7 | 1396.9 | 1526.8 | 1713.2 | 1805.2 | 1666.0 | 1566.9 | 1548.0 | 1538.5 |
| 65° | 9693.9 | 4299.5 | 1250.7 | 1345.1 | 1467.7 | 1640.0 | 1758.0 | 1651.9 | 1562.1 | 1555.1 | 1548.0 |
| 67.5° | 7157.2 | 2947.3 | 1172.8 | 1279.0 | 1401.7 | 1564.5 | 1713.2 | 1630.6 | 1533.8 | 1562.1 | 1552.7 |
| 70° | 4502.4 | 1968.1 | 1099.7 | 1203.5 | 1314.4 | 1477.2 | 1654.2 | 1592.8 | 1498.4 | 1481.9 | 1451.3 |
| 72.5° | 2541.4 | 1422.9 | 1012.3 | 1106.7 | 1201.1 | 1361.5 | 1573.9 | 1529.1 | 1418.2 | 1352.1 | 1321.4 |
| 73° | 2296.0 | 1347.4 | 991.1 | 1083.1 | 1175.2 | 1338.0 | 1555.1 | 1510.3 | 1394.6 | 1321.4 | 1293.1 |
| 75° | 1680.2 | 1102.0 | 894.4 | 986.4 | 1066.6 | 1229.5 | 1465.4 | 1415.9 | 1290.8 | 1203.5 | 1184.6 |
| 77.5° | 1217.6 | 849.6 | 769.3 | 851.9 | 922.7 | 1078.4 | 1330.9 | 1274.3 | 1151.5 | 1104.4 | 1085.5 |
| 80° | 877.8 | 644.3 | 637.1 | 717.4 | 778.8 | 936.8 | 1186.9 | 1128.0 | 1010.0 | 1149.2 | 1118.5 |
| 82.5° | 523.9 | 413.0 | 467.3 | 556.9 | 620.6 | 785.8 | 1031.2 | 962.8 | 849.6 | 859.0 | 731.5 |
| 85° | 250.1 | 233.6 | 290.2 | 365.8 | 410.6 | 538.1 | 859.0 | 804.7 | 679.6 | 556.9 | 545.1 |
| 87.5° | 110.9 | 106.2 | 139.2 | 162.9 | 219.4 | 323.3 | 587.6 | 521.5 | 493.2 | 295.0 | 231.3 |
| 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)