

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: P196281

Luminaire Tested: **NAV-AF-03-D-UNV-T2R-800**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196281  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24459)  
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-T2R-800  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(3) 70 CRI, 4000K, 800mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II  
ROADWAY OPTICS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 15689 lumens  
Efficiency: N/A  
Efficacy: 126.5 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 1.5' x H: 0')  
IES Classification: Type II - Short - Semi-Cutoff  
BUG Rating: B2 - U0 - G2

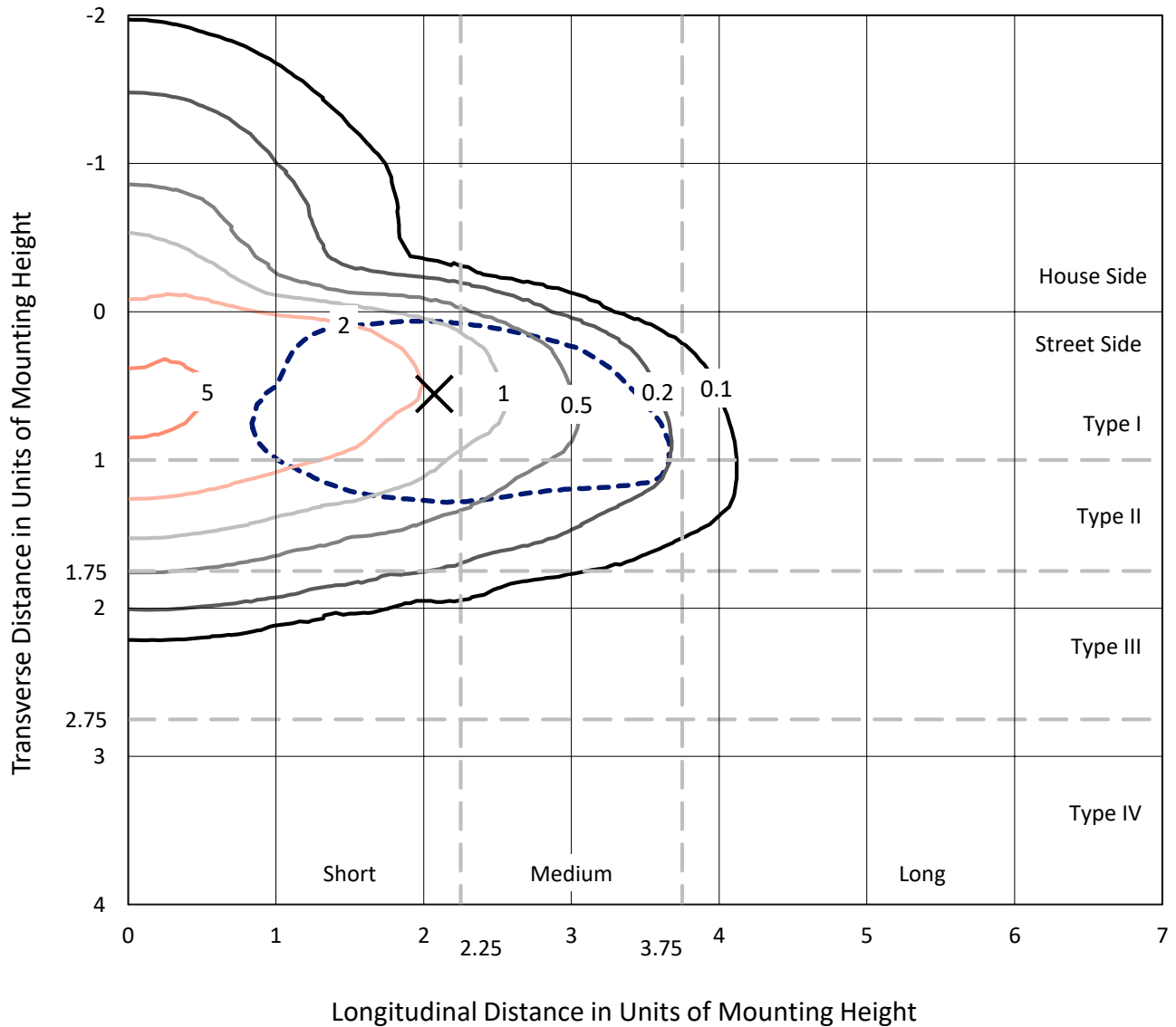
Input Watts (W): 124  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



REPORT NUMBER: P196281  
 CATALOG NUMBER: NAV-AF-03-D-UNV-T2R-800

### Iso-Footcandle Lines of Horizontal Illumination

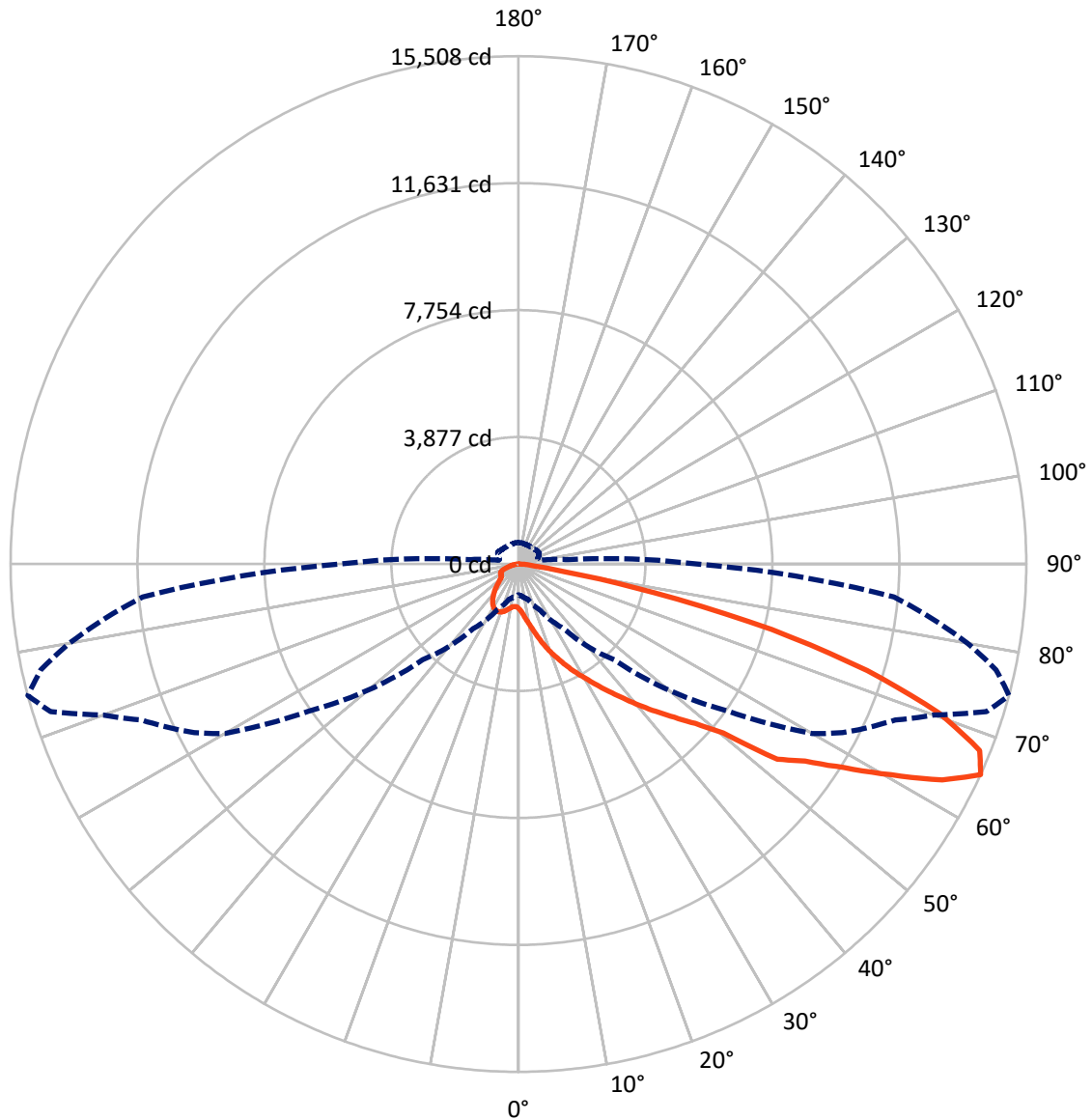
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 6.2 fc  
 Type II - Short - Semi-Cutoff

REPORT NUMBER: P196281  
CATALOG NUMBER: NAV-AF-03-D-UNV-T2R-800

### Luminous Intensity Polar Plot



— Vertical Plane Through 75-Deg Lateral    - - - Horizontal Cone Through 65-Deg Vertical

REPORT NUMBER: P196281

CATALOG NUMBER: NAV-AF-03-D-UNV-T2R-800

**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	2357.5	0.0	2357.5
	% Fixture	15.0	0.0	15.0
<b>Street Side</b>	Lumens	13331.5	0.0	13331.5
	% Fixture	85.0	0.0	85.0
<b>Total</b>	Lumens	15689.0	0.0	15689.0
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	160.5	1.0
10°-20°	613.0	3.9
20°-30°	1237.0	7.9
30°-40°	2100.8	13.4
40°-50°	2930.1	18.7
50°-60°	3591.2	22.9
60°-70°	3378.8	21.5
70°-80°	1481.6	9.4
80°-90°	196.0	1.2
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°	15689.0	100.0
0°-180°	15689.0	100.0



REPORT NUMBER: P196281

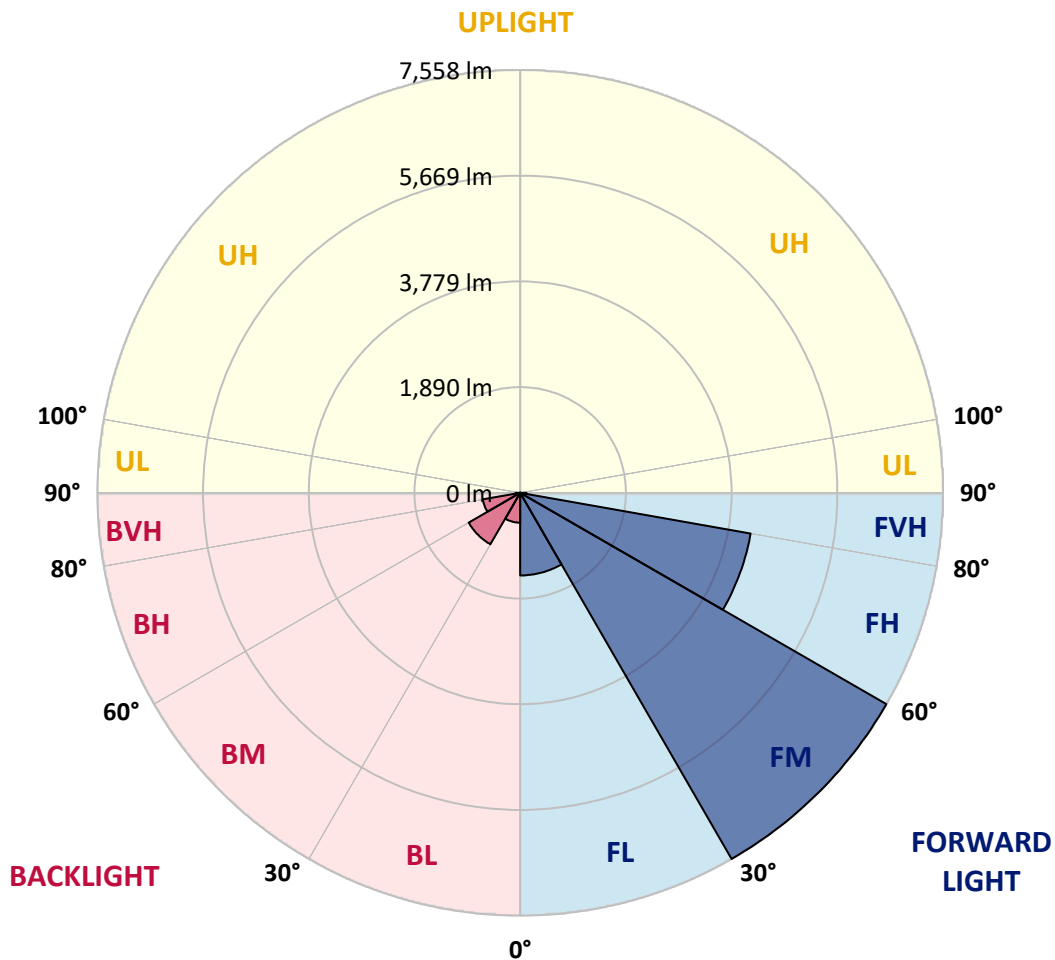
CATALOG NUMBER: NAV-AF-03-D-UNV-T2R-800

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1476.8	9.4			
FM (30°-60°)	7558.3	48.2			
FH (60°-80°)	4182.8	26.7			G2/5000
FVH (80°-90°)	113.6	0.7			G2/225
BL (0°-30°)	533.7	3.4	B2/1000		
BM (30°-60°)	1063.8	6.8	B2/2500		
BH (60°-80°)	677.6	4.3	B2/1000		G2/1000
BVH (80°-90°)	82.4	0.5			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 Short





REPORT NUMBER: P196281

CATALOG NUMBER: NAV-AF-03-D-UNV-T2R-800

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	57.5°	60°	62.5°	65°
0°	1359.4	1359.4	1359.4	1359.4	1359.4	1359.4	1359.4	1359.4	1359.4	1359.4	1359.4
2.5°	1711.7	1691.8	1693.7	1665.8	1624.9	1579.9	1543.0	1523.1	1506.1	1501.1	1473.2
5°	2238.6	2213.7	2204.7	2140.8	2045.0	1931.2	1818.5	1774.5	1738.6	1716.6	1662.8
7.5°	2669.8	2656.8	2644.8	2586.0	2491.2	2345.4	2163.7	2098.9	2039.0	1973.2	1908.3
10°	2963.3	2958.3	2953.3	2912.3	2833.5	2706.7	2511.1	2440.2	2365.4	2281.6	2196.7
12.5°	3184.9	3184.9	3188.8	3154.9	3106.9	3009.1	2831.5	2765.6	2689.7	2602.0	2505.1
15°	3333.5	3337.5	3358.4	3368.5	3343.5	3280.6	3124.9	3067.0	2995.2	2908.4	2812.5
17.5°	3432.3	3440.3	3471.3	3504.2	3536.1	3514.1	3398.3	3344.5	3279.6	3199.8	3110.0
20°	3661.9	3651.9	3652.9	3642.9	3689.8	3706.8	3642.9	3598.0	3546.1	3473.2	3391.4
22.5°	4144.0	4124.9	4076.0	3951.4	3894.4	3888.4	3850.5	3826.6	3786.7	3740.7	3658.9
25°	4772.7	4750.8	4653.9	4448.3	4278.7	4122.0	4052.1	4037.2	4011.2	3980.3	3921.4
27.5°	5422.5	5398.5	5273.7	5014.2	4792.6	4476.3	4258.7	4238.8	4214.8	4201.9	4173.8
30°	5994.4	5968.4	5845.7	5582.1	5314.6	4937.4	4537.2	4467.3	4426.4	4430.4	4414.4
32.5°	6496.4	6473.4	6335.6	6067.2	5795.7	5429.4	4898.5	4789.7	4697.9	4663.9	4675.9
35°	6917.5	6896.6	6745.8	6475.4	6201.9	5897.5	5363.5	5199.9	5050.2	4956.4	4945.4
37.5°	7165.1	7153.1	7047.3	6817.8	6546.3	6322.7	5884.5	5703.0	5482.3	5345.6	5285.7
40°	7151.0	7164.0	7146.1	7042.3	6831.7	6669.0	6427.5	6247.9	6032.2	5828.7	5706.9
42.5°	6947.5	6965.5	7046.3	7100.2	7043.3	6944.5	6901.5	6767.8	6574.2	6358.7	6190.0
45°	6668.0	6684.0	6788.8	6983.4	7146.1	7174.1	7316.8	7249.9	7086.2	6902.6	6716.9
47.5°	6239.9	6270.8	6392.5	6702.0	7089.3	7358.7	7665.1	7696.1	7601.2	7449.5	7275.8
50°	5620.1	5661.0	5831.6	6271.8	6873.6	7548.4	8183.1	8300.8	8262.9	8109.2	7933.6
52.5°	4985.4	5026.3	5253.8	5721.9	6526.3	7626.2	8693.1	8994.5	9212.1	9370.7	9401.7
55°	4324.6	4370.5	4620.1	5158.9	6063.2	7527.4	9057.4	9399.7	9620.2	9786.0	9852.9
57.5°	3579.0	3631.0	3872.5	4417.4	5408.4	7130.2	9462.6	9947.7	10276.1	10531.5	10675.2
60°	2723.7	2788.6	3039.1	3588.0	4548.1	6369.6	9643.3	10360.9	10882.9	11266.1	11493.7
62.5°	1726.6	1792.5	2053.0	2622.9	3569.1	5330.6	9132.2	10179.2	11069.5	11636.4	12053.5
65°	942.1	971.1	1115.8	1545.0	2406.3	4136.0	7836.7	9071.3	10353.9	11157.3	11798.0
67.5°	706.7	710.6	725.6	830.4	1281.6	2792.6	6127.1	7257.8	8682.1	9716.1	10481.6
70°	618.8	618.8	620.8	621.7	695.6	1513.0	4150.9	5191.9	6497.4	7543.3	8494.5
72.5°	555.0	548.9	547.0	535.0	544.9	775.5	2259.6	3194.8	4295.7	5469.4	6356.6
75°	479.0	478.0	478.0	466.1	472.1	545.9	980.1	1533.0	2386.3	3479.3	4352.6
77.5°	414.2	407.2	408.2	401.2	420.2	418.2	465.1	631.8	1039.0	1827.4	2552.1
80°	341.4	336.3	339.3	335.3	365.3	309.4	313.4	386.3	516.0	801.5	1129.8
82.5°	252.5	254.5	273.4	271.5	307.4	208.6	229.6	288.5	347.3	399.3	434.1
85°	147.7	150.7	196.6	206.6	225.6	109.8	140.8	171.7	193.6	214.6	223.5
87.5°	16.0	21.0	109.8	112.8	100.8	32.9	56.9	71.8	76.8	81.8	71.8
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: P196281

CATALOG NUMBER: NAV-AF-03-D-UNV-T2R-800

**CANDELA DISTRIBUTION (continued):**

	67.5°	70°	72.5°	75°	77.5°	80°	85°	90°	95°	100°	102.5°
0°	1359.4	1359.4	1359.4	1359.4	1359.4	1359.4	1359.4	1359.4	1359.4	1359.4	1359.4
2.5°	1464.1	1451.2	1437.2	1429.3	1415.3	1403.3	1381.3	1363.4	1343.3	1329.4	1323.4
5°	1635.8	1604.9	1572.0	1548.0	1518.1	1492.1	1442.2	1382.3	1363.4	1323.4	1313.5
7.5°	1859.4	1803.5	1747.6	1701.7	1649.8	1606.9	1523.1	1415.3	1401.2	1337.4	1323.4
10°	2121.9	2040.1	1957.2	1886.3	1810.5	1744.6	1620.9	1469.2	1454.1	1372.3	1358.4
12.5°	2415.3	2315.4	2208.7	2102.9	2013.1	1920.3	1751.6	1552.9	1529.0	1432.2	1413.2
15°	2717.7	2610.0	2486.2	2358.4	2247.6	2124.9	1912.3	1662.8	1618.8	1505.1	1479.1
17.5°	3016.2	2899.3	2769.6	2626.9	2497.1	2350.4	2085.9	1785.6	1709.7	1577.0	1544.0
20°	3304.5	3185.8	3049.1	2909.4	2747.6	2580.0	2263.6	1906.3	1790.5	1636.8	1593.9
22.5°	3567.0	3465.2	3328.5	3167.9	3004.2	2815.6	2444.2	2027.1	1861.4	1682.8	1627.8
25°	3843.5	3750.8	3615.0	3460.2	3269.7	3060.1	2630.9	2141.9	1918.2	1707.7	1639.8
27.5°	4123.0	4043.1	3915.3	3752.7	3548.1	3315.6	2820.5	2247.6	1964.2	1715.7	1633.9
30°	4421.4	4359.5	4241.8	4060.1	3853.5	3596.0	3027.1	2351.5	1993.1	1704.6	1606.9
32.5°	4703.8	4701.9	4597.0	4408.4	4185.8	3902.5	3244.7	2456.2	2008.1	1673.8	1560.0
35°	4997.3	5038.2	4959.4	4779.7	4545.2	4230.7	3485.2	2568.0	2009.1	1618.8	1499.1
37.5°	5330.6	5403.5	5368.5	5197.9	4951.4	4605.0	3767.6	2693.7	2003.1	1543.0	1410.2
40°	5709.9	5809.7	5808.7	5665.0	5401.5	5024.2	4096.0	2834.5	1989.1	1448.2	1305.5
42.5°	6144.0	6262.8	6295.8	6154.1	5887.6	5482.3	4472.3	2989.2	1967.1	1354.4	1194.7
45°	6641.1	6745.8	6807.7	6676.0	6408.6	5981.4	4904.4	3164.8	1940.2	1233.6	1068.0
47.5°	7173.0	7294.8	7387.6	7274.8	6989.4	6550.3	5416.4	3391.4	1930.2	1095.9	931.2
50°	7832.7	7958.6	8159.2	8108.2	7951.5	7598.2	6499.3	3926.4	1934.2	965.2	816.4
52.5°	9469.6	9758.0	10011.5	9898.8	9526.4	8920.6	7379.7	4223.8	1850.4	858.4	736.5
55°	9963.6	10291.0	10665.3	10618.3	10261.0	9650.2	8075.3	4472.3	1769.6	780.5	684.7
57.5°	10827.9	11214.2	11737.1	11727.2	11289.1	10601.4	8970.6	4769.7	1734.6	735.6	658.7
60°	11743.2	12235.2	12957.8	13070.5	12594.5	11878.9	10028.5	5135.0	1739.6	710.6	643.7
62.5°	12411.9	13133.5	14184.4	14521.7	13960.8	13172.3	11126.3	5500.3	1709.7	681.7	625.7
65°	12452.8	13491.8	14982.9	15507.8	14939.9	13926.9	11513.6	5428.4	1530.0	642.7	596.8
67.5°	11454.7	12808.1	14619.6	15195.4	14614.6	13461.8	10834.9	4745.8	1243.6	574.9	547.0
70°	9540.4	11111.4	12991.7	13633.5	13153.4	11986.6	9429.7	3790.6	929.1	485.1	472.1
72.5°	7372.6	8837.8	10545.5	11139.3	10772.1	9746.1	7437.6	2762.6	663.7	393.2	383.3
75°	5270.8	6518.3	7758.0	7984.4	7622.2	6680.0	4825.6	1725.6	465.1	322.3	308.4
77.5°	3263.6	4075.0	4520.2	4228.8	3766.7	3130.9	1964.2	852.3	309.4	262.5	248.5
80°	1448.2	1699.7	1586.9	1414.2	1116.9	918.2	599.9	378.3	199.6	202.6	194.7
82.5°	487.0	515.0	501.0	498.1	449.1	393.2	254.5	163.7	111.8	129.7	126.7
85°	237.5	248.5	249.5	258.5	224.5	174.6	68.8	64.9	47.9	69.9	72.8
87.5°	71.8	72.8	65.9	71.8	57.9	39.9	13.0	18.0	9.0	17.0	17.0
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: P196281

CATALOG NUMBER: NAV-AF-03-D-UNV-T2R-800

**CANDELA DISTRIBUTION (continued):**

	105°	107.5°	110°	112.5°	115°	117.5°	120°	122.5°	125°	127.5°	130°
0°	1359.4	1359.4	1359.4	1359.4	1359.4	1359.4	1359.4	1359.4	1359.4	1359.4	1359.4
2.5°	1312.4	1308.5	1301.5	1293.5	1291.5	1281.6	1278.5	1273.5	1270.5	1265.5	1261.5
5°	1300.5	1293.5	1285.5	1276.5	1276.5	1262.5	1256.6	1250.6	1250.6	1241.6	1237.6
7.5°	1312.4	1303.4	1294.4	1286.5	1289.5	1273.5	1267.5	1261.5	1260.6	1251.6	1247.6
10°	1346.4	1337.4	1326.5	1318.5	1315.4	1302.4	1295.5	1286.5	1280.5	1274.5	1268.6
12.5°	1398.3	1386.3	1372.3	1355.4	1348.4	1337.4	1326.5	1314.5	1300.5	1294.4	1285.5
15°	1460.2	1440.2	1421.2	1400.3	1381.3	1370.3	1355.4	1336.4	1317.5	1309.5	1297.5
17.5°	1511.1	1490.1	1463.1	1438.2	1404.3	1395.3	1374.3	1351.4	1320.4	1317.5	1299.5
20°	1554.0	1522.0	1489.1	1459.1	1407.3	1402.3	1376.3	1349.4	1305.5	1305.5	1283.5
22.5°	1577.9	1534.0	1495.0	1455.1	1390.3	1386.3	1356.3	1324.4	1270.5	1272.6	1245.5
25°	1581.9	1529.0	1480.1	1432.2	1357.4	1350.4	1312.4	1277.6	1218.6	1214.7	1186.7
27.5°	1565.9	1504.0	1447.2	1389.3	1308.5	1293.5	1251.6	1209.6	1151.7	1141.8	1111.8
30°	1529.0	1456.2	1392.3	1325.4	1240.6	1216.6	1172.7	1129.8	1070.9	1057.9	1030.0
32.5°	1470.2	1387.3	1316.4	1249.5	1155.7	1125.9	1081.9	1039.0	982.1	972.1	946.1
35°	1392.3	1299.5	1224.6	1153.8	1060.0	1029.0	987.0	949.2	897.2	893.2	875.3
37.5°	1294.4	1197.7	1117.8	1050.0	961.2	945.2	902.2	874.3	831.4	835.3	826.4
40°	1183.7	1084.8	1009.0	949.2	872.3	858.4	832.4	811.4	774.5	785.4	786.4
42.5°	1072.0	973.1	904.3	850.4	784.5	775.5	757.5	745.5	717.6	739.6	748.5
45°	945.2	853.3	794.4	753.5	704.6	704.6	695.6	694.7	675.7	706.7	715.7
47.5°	822.4	750.5	709.6	684.7	650.7	666.7	663.7	671.7	657.8	689.7	697.7
50°	729.6	679.6	654.7	642.7	618.8	643.7	649.8	660.7	648.8	676.7	682.7
52.5°	670.6	637.8	623.8	620.8	603.8	634.7	644.8	654.7	640.8	666.7	665.7
55°	637.8	615.8	610.8	616.8	603.8	633.7	643.7	650.7	638.7	656.7	655.7
57.5°	625.7	613.8	616.8	625.7	616.8	641.8	646.7	654.7	642.7	650.7	654.7
60°	624.8	624.8	636.8	648.8	642.7	660.7	663.7	662.7	651.7	652.7	654.7
62.5°	618.8	633.7	653.8	672.7	670.6	692.6	694.7	681.7	672.7	662.7	659.7
65°	599.9	624.8	653.8	679.6	683.6	717.6	721.6	708.6	702.7	685.7	672.7
67.5°	557.9	589.8	623.8	655.7	662.7	708.6	717.6	722.6	725.6	714.6	697.7
70°	487.0	520.0	555.0	591.9	601.8	652.7	671.7	694.7	712.6	728.5	722.6
72.5°	396.2	426.2	456.1	490.1	505.0	557.9	582.9	622.8	650.7	691.6	708.6
75°	314.4	332.4	350.4	371.2	383.3	435.2	466.1	514.0	551.9	608.9	646.7
77.5°	247.6	256.5	265.5	274.5	279.5	308.4	333.4	381.3	425.1	497.1	552.9
80°	190.7	195.6	196.6	199.6	197.6	211.5	220.5	249.5	287.4	358.3	424.2
82.5°	122.8	126.7	128.8	133.7	123.8	141.7	147.7	150.7	170.6	222.6	269.4
85°	68.8	69.9	70.9	72.8	58.9	76.8	77.8	72.8	70.9	91.9	103.8
87.5°	17.0	16.0	17.0	17.0	7.0	16.0	16.0	10.9	8.0	14.9	12.0
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: P196281

CATALOG NUMBER: NAV-AF-03-D-UNV-T2R-800

**CANDELA DISTRIBUTION (continued):**

	135°	145°	155°	165°	175°	180°
0°	1359.4	1359.4	1359.4	1359.4	1359.4	1359.4
2.5°	1252.6	1250.6	1251.6	1246.6	1244.6	1245.5
5°	1232.6	1228.6	1228.6	1225.6	1221.6	1221.6
7.5°	1241.6	1233.6	1230.6	1224.6	1218.6	1219.7
10°	1255.6	1241.6	1231.6	1222.6	1215.7	1215.7
12.5°	1264.6	1239.6	1224.6	1212.6	1204.6	1204.6
15°	1266.5	1228.6	1206.7	1193.7	1185.7	1185.7
17.5°	1254.5	1206.7	1178.7	1161.8	1152.8	1154.7
20°	1224.6	1165.8	1132.8	1114.8	1105.8	1106.8
22.5°	1177.7	1109.8	1072.0	1051.0	1042.0	1042.0
25°	1113.8	1039.9	999.0	982.1	974.2	974.2
27.5°	1041.0	965.2	929.1	916.3	911.2	911.2
30°	959.1	896.2	870.3	861.3	853.3	853.3
32.5°	890.3	845.4	836.4	824.4	803.4	802.4
35°	835.3	830.4	823.4	787.5	757.5	753.5
37.5°	805.5	835.3	791.5	729.6	705.6	704.6
40°	789.5	817.4	741.5	711.6	708.6	708.6
42.5°	751.6	771.5	738.6	721.6	721.6	722.6
45°	711.6	728.5	745.5	730.6	735.6	736.5
47.5°	683.6	717.6	745.5	732.5	742.6	748.5
50°	657.8	707.6	730.6	730.6	741.5	742.6
52.5°	651.7	693.7	716.6	727.6	728.5	723.6
55°	652.7	682.7	705.6	719.6	713.6	713.6
57.5°	651.7	676.7	696.6	701.6	704.6	704.6
60°	652.7	668.7	684.7	682.7	692.6	692.6
62.5°	655.7	657.8	665.7	663.7	678.7	678.7
65°	662.7	643.7	638.7	640.8	658.7	657.8
67.5°	675.7	624.8	608.9	609.8	635.8	631.8
70°	694.7	598.8	574.9	568.9	612.8	605.8
72.5°	700.6	568.9	531.0	525.0	551.0	531.0
75°	672.7	544.9	484.1	464.1	453.2	447.1
77.5°	599.9	530.0	435.2	393.2	376.2	372.3
80°	497.1	499.0	371.2	321.4	373.3	372.3
82.5°	375.3	431.2	297.4	278.4	270.5	225.6
85°	181.7	324.4	228.5	191.6	114.8	108.7
87.5°	16.0	135.7	131.8	85.8	39.0	36.9
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)