

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: P196284

Luminaire Tested: **NAV-AF-06-D-UNV-T2R-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196284
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-06-D-UNV-T2R-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(6) 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: 31199 lumens
Efficiency: N/A
Efficacy: 125.3 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type II - Short - Semi-Cutoff
BUG Rating: B3 - U0 - G4

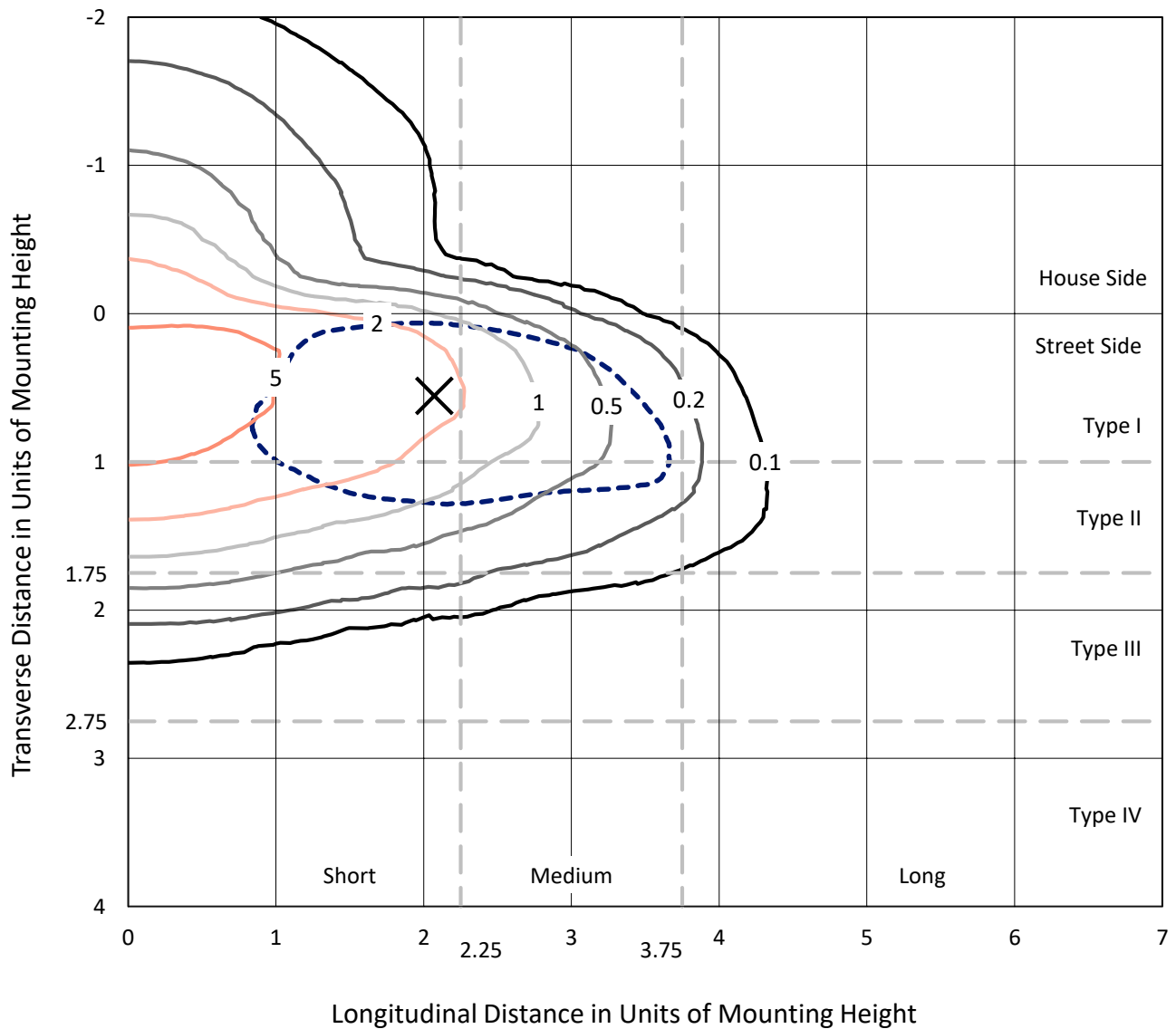
Input Watts (W): 249
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



REPORT NUMBER: P196284
 CATALOG NUMBER: NAV-AF-06-D-UNV-T2R-800

Iso-Footcandle Lines of Horizontal Illumination

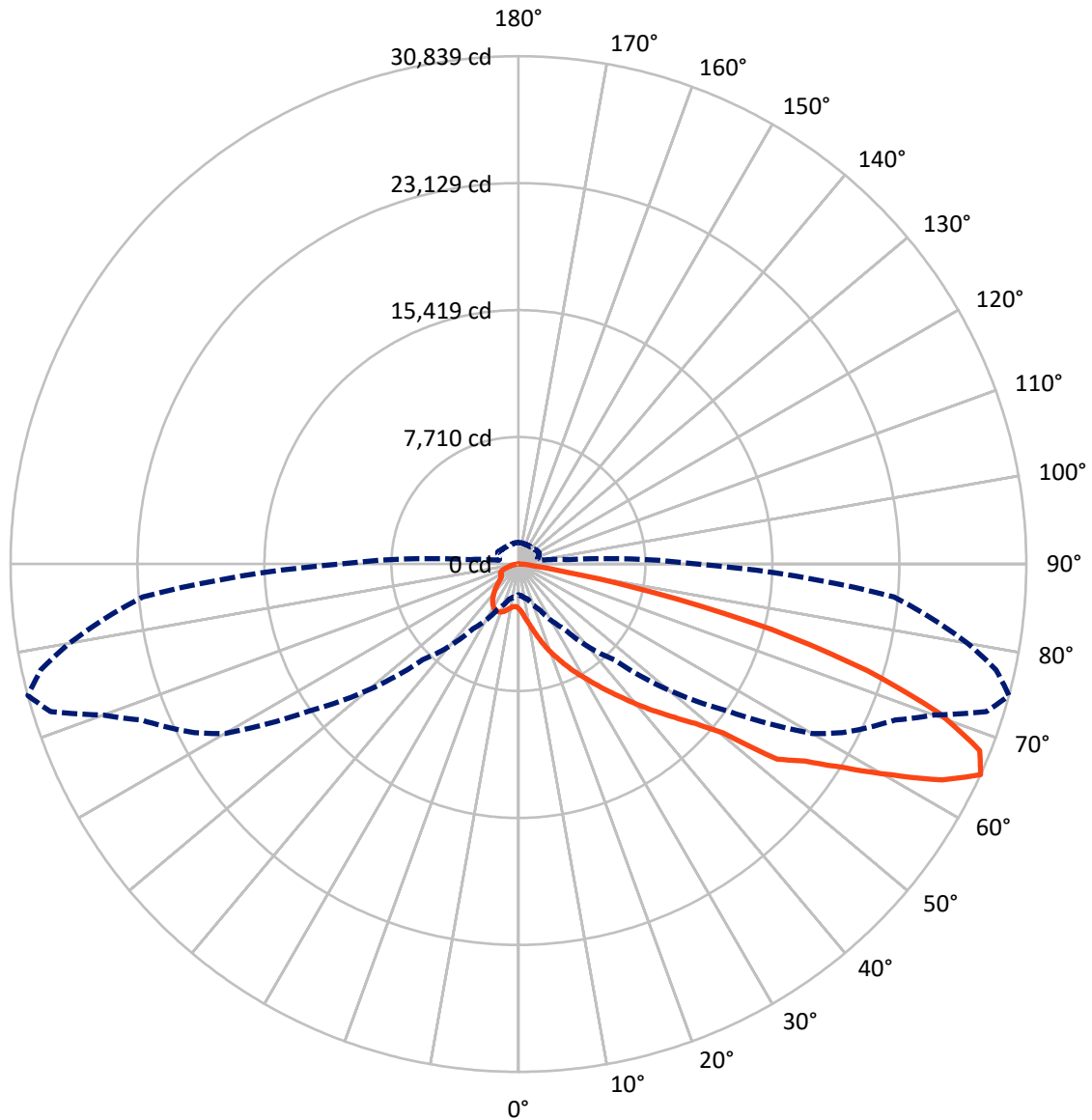
✕ Max cd
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 8.6 fc
 Type II - Short - Semi-Cutoff

REPORT NUMBER: P196284
CATALOG NUMBER: NAV-AF-06-D-UNV-T2R-800

Luminous Intensity Polar Plot



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

REPORT NUMBER: P196284

CATALOG NUMBER: NAV-AF-06-D-UNV-T2R-800

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	4688.1	0.0	4688.1
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	26510.8	0.0	26510.8
	% Fixture	85.0	0.0	85.0
Total	Lumens	31199.0	0.0	31199.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	319.1	1.0
10°-20°	1218.9	3.9
20°-30°	2459.9	7.9
30°-40°	4177.6	13.4
40°-50°	5826.8	18.7
50°-60°	7141.4	22.9
60°-70°	6719.1	21.5
70°-80°	2946.3	9.4
80°-90°	389.8	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°	31199.0	100.0
0°-180°	31199.0	100.0



REPORT NUMBER: P196284

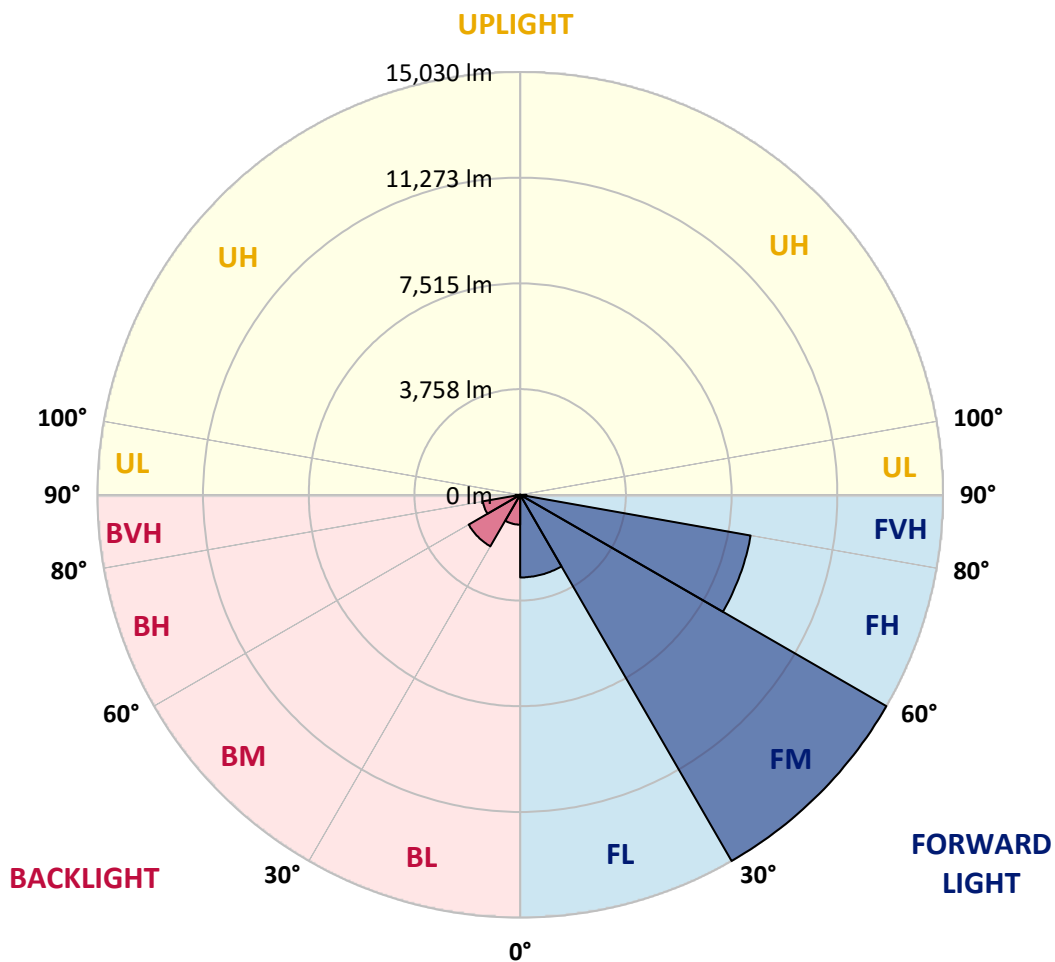
CATALOG NUMBER: NAV-AF-06-D-UNV-T2R-800

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	2936.7	9.4			
FM	(30°-60°)	15030.3	48.2			
FH	(60°-80°)	8317.9	26.7			G4/12000
FVH	(80°-90°)	226.0	0.7			G3/500
BL	(0°-30°)	1061.3	3.4	B3/2500		
BM	(30°-60°)	2115.5	6.8	B2/2500		
BH	(60°-80°)	1347.4	4.3	B3/2500		G3/2500
BVH	(80°-90°)	163.8	0.5			G2/225
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B3-U0-G4

Type II Short





REPORT NUMBER: P196284

CATALOG NUMBER: NAV-AF-06-D-UNV-T2R-800

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	57.5°	60°	62.5°	65°
0°	2703.2	2703.2	2703.2	2703.2	2703.2	2703.2	2703.2	2703.2	2703.2	2703.2	2703.2
2.5°	3403.8	3364.1	3368.1	3312.5	3231.1	3141.8	3068.3	3028.7	2995.0	2985.1	2929.4
5°	4451.8	4402.2	4384.3	4257.2	4066.7	3840.5	3616.1	3528.9	3457.4	3413.7	3306.6
7.5°	5309.1	5283.3	5259.5	5142.5	4953.8	4664.1	4302.9	4173.8	4054.8	3923.8	3794.8
10°	5892.7	5882.8	5872.9	5791.4	5634.6	5382.6	4993.5	4852.7	4703.8	4537.1	4368.4
12.5°	6333.3	6333.3	6341.2	6273.8	6178.4	5984.0	5630.6	5499.7	5348.8	5174.2	4981.7
15°	6629.0	6636.9	6678.6	6698.5	6648.9	6523.8	6214.2	6099.0	5956.1	5783.5	5593.0
17.5°	6825.4	6841.4	6902.9	6968.3	7031.9	6988.2	6758.0	6650.8	6521.8	6363.1	6184.5
20°	7282.0	7262.1	7264.1	7244.2	7337.5	7371.3	7244.2	7154.9	7051.7	6906.9	6744.1
22.5°	8240.6	8202.8	8105.7	7857.5	7744.5	7732.5	7657.1	7609.4	7530.0	7438.8	7276.0
25°	9490.9	9447.3	9254.8	8846.0	8508.5	8196.9	8058.0	8028.2	7976.7	7915.1	7798.0
27.5°	10783.0	10735.4	10487.3	9971.3	9530.6	8901.5	8468.8	8429.1	8381.5	8355.7	8300.1
30°	11920.2	11868.7	11624.5	11100.6	10568.7	9818.5	9022.5	8883.6	8802.3	8810.2	8778.5
32.5°	12918.6	12872.9	12599.1	12065.2	11525.3	10796.9	9741.0	9524.7	9342.1	9274.7	9298.4
35°	13756.1	13714.5	13414.8	12876.9	12333.1	11727.7	10665.9	10340.4	10042.7	9856.1	9834.3
37.5°	14248.4	14224.5	14014.1	13557.7	13017.9	12573.3	11701.9	11340.7	10902.1	10630.2	10511.1
40°	14220.6	14246.4	14210.6	14004.2	13585.5	13261.9	12781.7	12424.4	11995.7	11590.9	11348.7
42.5°	13815.7	13851.5	14012.2	14119.4	14006.2	13809.7	13724.4	13458.5	13073.4	12644.7	12309.3
45°	13260.0	13291.7	13500.1	13887.2	14210.6	14266.3	14550.0	14417.1	14091.6	13726.4	13357.2
47.5°	12408.5	12470.1	12712.2	13327.4	14097.5	14633.4	15242.7	15304.3	15115.7	14814.0	14468.7
50°	11176.0	11257.4	11596.8	12472.0	13668.9	15010.5	16272.8	16506.9	16431.6	16125.9	15776.6
52.5°	9913.7	9995.0	10447.6	11378.5	12978.2	15165.3	17286.9	17886.4	18319.0	18634.6	18696.2
55°	8599.8	8691.1	9187.3	10259.1	12057.2	14968.8	18011.4	18692.2	19130.8	19460.3	19593.2
57.5°	7117.3	7220.4	7700.8	8784.4	10755.2	14178.9	18817.2	19781.8	20434.8	20942.9	21228.7
60°	5416.3	5545.3	6043.5	7135.1	9044.4	12666.6	19176.4	20603.5	21641.4	22403.6	22856.1
62.5°	3433.5	3564.6	4082.6	5215.8	7097.4	10600.4	18160.2	20242.3	22012.7	23140.0	23969.6
65°	1873.5	1931.1	2218.9	3072.3	4785.2	8224.7	15584.0	18039.2	20589.5	22187.3	23461.5
67.5°	1405.2	1413.1	1442.9	1651.2	2548.4	5553.3	12184.3	14432.9	17265.2	19321.3	20843.6
70°	1230.5	1230.5	1234.5	1236.4	1383.3	3008.8	8254.5	10324.5	12920.6	15000.6	16892.0
72.5°	1103.6	1091.6	1087.6	1063.8	1083.6	1542.1	4493.4	6353.1	8542.3	10876.3	12640.7
75°	952.7	950.7	950.7	926.9	938.8	1085.7	1949.0	3048.5	4745.5	6918.7	8655.4
77.5°	823.7	809.8	811.7	797.9	835.5	831.6	924.8	1256.3	2066.1	3634.0	5075.0
80°	678.7	668.8	674.8	666.9	726.4	615.3	623.2	768.1	1026.1	1593.8	2246.7
82.5°	502.2	506.2	543.8	539.8	611.3	414.8	456.4	573.6	690.7	793.9	863.4
85°	293.7	299.7	391.0	410.8	448.6	218.3	279.9	341.4	385.0	426.7	444.6
87.5°	31.7	41.6	218.3	224.2	200.5	65.5	113.1	142.9	152.8	162.8	142.9
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: P196284

CATALOG NUMBER: NAV-AF-06-D-UNV-T2R-800

CANDELA DISTRIBUTION (continued):

	67.5°	70°	72.5°	75°	77.5°	80°	85°	90°	95°	100°	102.5°
0°	2703.2	2703.2	2703.2	2703.2	2703.2	2703.2	2703.2	2703.2	2703.2	2703.2	2703.2
2.5°	2911.6	2885.8	2858.0	2842.2	2814.3	2790.5	2746.8	2711.1	2671.4	2643.6	2631.7
5°	3253.0	3191.4	3125.9	3078.3	3018.7	2967.2	2867.9	2748.9	2711.1	2631.7	2611.9
7.5°	3697.6	3586.4	3475.3	3383.9	3280.7	3195.4	3028.7	2814.3	2786.5	2659.6	2631.7
10°	4219.6	4056.8	3892.0	3751.2	3600.3	3469.3	3223.2	2921.5	2891.8	2729.0	2701.2
12.5°	4803.1	4604.6	4392.2	4181.8	4003.2	3818.6	3483.2	3088.3	3040.6	2848.1	2810.4
15°	5404.5	5190.0	4943.9	4689.9	4469.6	4225.5	3802.7	3306.6	3219.2	2992.9	2941.4
17.5°	5997.9	5765.7	5507.7	5223.8	4965.8	4674.1	4148.1	3550.7	3399.9	3135.9	3070.4
20°	6571.4	6335.2	6063.3	5785.5	5464.0	5130.5	4501.4	3790.9	3560.6	3254.9	3169.6
22.5°	7093.4	6891.0	6619.1	6299.5	5974.0	5598.9	4860.6	4030.9	3701.5	3346.3	3237.1
25°	7643.2	7458.6	7188.7	6881.1	6502.0	6085.2	5231.8	4259.3	3814.7	3395.9	3260.9
27.5°	8199.0	8040.1	7786.1	7462.6	7055.7	6593.2	5608.8	4469.6	3905.9	3411.7	3249.0
30°	8792.4	8669.3	8435.0	8073.8	7663.0	7150.9	6019.7	4676.0	3963.5	3390.0	3195.4
32.5°	9354.1	9350.1	9141.7	8766.6	8324.0	7760.3	6452.4	4884.4	3993.3	3328.4	3102.1
35°	9937.6	10018.9	9862.2	9504.8	9038.5	8413.3	6930.7	5106.7	3995.2	3219.2	2981.1
37.5°	10600.4	10745.3	10675.8	10336.5	9846.2	9157.6	7492.4	5356.8	3983.4	3068.3	2804.4
40°	11354.7	11553.1	11551.2	11265.3	10741.4	9991.2	8145.3	5636.7	3955.5	2879.8	2596.0
42.5°	12218.0	12454.2	12519.7	12237.9	11707.9	10902.1	8893.5	5944.3	3911.9	2693.3	2375.7
45°	13206.4	13414.8	13537.8	13275.9	12743.9	11894.5	9752.9	6293.6	3858.3	2453.1	2123.6
47.5°	14264.2	14506.4	14691.0	14466.7	13899.0	13025.7	10771.2	6744.1	3838.4	2179.2	1851.7
50°	15576.2	15826.3	16225.1	16124.0	15812.4	15109.7	12924.6	7807.9	3846.4	1919.3	1623.5
52.5°	18831.1	19404.7	19908.8	19684.5	18944.2	17739.5	14675.0	8399.3	3679.7	1706.9	1464.8
55°	19813.5	20464.5	21208.8	21115.5	20405.0	19190.4	16058.5	8893.5	3519.0	1552.0	1361.5
57.5°	21532.3	22300.4	23340.4	23320.5	22449.3	21081.8	17838.7	9485.0	3449.5	1462.7	1309.9
60°	23352.3	24330.8	25767.7	25992.1	25045.3	23622.3	19942.5	10211.4	3459.4	1413.1	1280.1
62.5°	24682.1	26117.1	28206.9	28877.8	27762.4	26194.5	22125.7	10937.8	3399.9	1355.6	1244.4
65°	24763.5	26829.5	29794.8	30838.7	29709.4	27694.9	22895.8	10794.9	3042.6	1278.2	1186.8
67.5°	22778.8	25470.0	29072.3	30217.5	29062.3	26770.0	21546.2	9437.3	2473.0	1143.2	1087.6
70°	18972.1	22095.9	25835.2	27111.4	26156.8	23836.6	18751.7	7538.0	1847.8	964.5	938.8
72.5°	14661.2	17574.8	20970.6	22151.6	21421.2	19380.8	14790.2	5493.8	1319.8	781.9	762.1
75°	10481.4	12962.2	15427.3	15877.8	15157.4	13283.8	9596.2	3431.6	924.8	641.1	613.3
77.5°	6490.1	8103.6	8988.9	8409.3	7490.4	6226.1	3905.9	1694.9	615.3	522.0	494.2
80°	2879.8	3380.0	3155.7	2812.4	2220.9	1826.0	1192.9	752.2	396.9	402.9	387.0
82.5°	968.5	1024.1	996.4	990.4	893.1	781.9	506.2	325.5	222.3	258.0	252.1
85°	472.4	494.2	496.1	514.0	446.5	347.3	137.0	129.0	95.2	138.9	144.8
87.5°	142.9	144.8	131.0	142.9	115.1	79.4	25.8	35.7	17.9	33.8	33.8
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: P196284

CATALOG NUMBER: NAV-AF-06-D-UNV-T2R-800

CANDELA DISTRIBUTION (continued):

	105°	107.5°	110°	112.5°	115°	117.5°	120°	122.5°	125°	127.5°	130°
0°	2703.2	2703.2	2703.2	2703.2	2703.2	2703.2	2703.2	2703.2	2703.2	2703.2	2703.2
2.5°	2610.0	2602.0	2588.1	2572.2	2568.2	2548.4	2542.4	2532.5	2526.6	2516.7	2508.7
5°	2586.1	2572.2	2556.4	2538.5	2538.5	2510.7	2498.8	2486.9	2486.9	2469.0	2461.0
7.5°	2610.0	2592.1	2574.2	2558.3	2564.2	2532.5	2520.7	2508.7	2506.7	2488.8	2480.9
10°	2677.4	2659.6	2637.7	2621.8	2615.9	2590.1	2576.2	2558.3	2546.4	2534.5	2522.6
12.5°	2780.6	2756.8	2729.0	2695.3	2681.4	2659.6	2637.7	2613.8	2586.1	2574.2	2556.4
15°	2903.6	2864.0	2826.2	2784.6	2746.8	2725.0	2695.3	2657.5	2619.9	2603.9	2580.2
17.5°	3004.9	2963.2	2909.6	2860.0	2792.6	2774.7	2733.0	2687.3	2625.8	2619.9	2584.1
20°	3090.2	3026.7	2961.2	2901.7	2798.5	2788.6	2736.9	2683.3	2596.0	2596.0	2552.4
22.5°	3137.9	3050.5	2973.1	2893.7	2764.7	2756.8	2697.2	2633.7	2526.6	2530.6	2477.0
25°	3145.8	3040.6	2943.3	2848.1	2699.3	2685.3	2610.0	2540.5	2423.4	2415.4	2359.8
27.5°	3114.1	2991.0	2877.9	2762.8	2602.0	2572.2	2488.8	2405.5	2290.4	2270.5	2211.0
30°	3040.6	2895.8	2768.7	2635.7	2467.1	2419.4	2332.0	2246.7	2129.6	2103.8	2048.3
32.5°	2923.5	2758.8	2617.8	2484.8	2298.4	2238.7	2151.5	2066.1	1953.0	1933.2	1881.5
35°	2768.7	2584.1	2435.2	2294.4	2107.8	2046.2	1962.9	1887.4	1784.2	1776.4	1740.7
37.5°	2574.2	2381.6	2222.9	2087.9	1911.3	1879.6	1794.2	1738.6	1653.3	1661.2	1643.4
40°	2353.9	2157.4	2006.5	1887.4	1734.6	1706.9	1655.2	1613.6	1540.2	1561.9	1564.0
42.5°	2131.6	1935.1	1798.1	1691.0	1560.0	1542.1	1506.4	1482.6	1427.0	1470.7	1488.5
45°	1879.6	1697.0	1579.8	1498.5	1401.2	1401.2	1383.3	1381.4	1343.6	1405.2	1423.0
47.5°	1635.4	1492.5	1411.2	1361.5	1294.0	1325.8	1319.8	1335.8	1307.9	1371.5	1387.3
50°	1450.9	1351.6	1302.0	1278.2	1230.5	1280.1	1292.1	1313.9	1290.0	1345.7	1357.6
52.5°	1333.7	1268.3	1240.4	1234.5	1200.7	1262.3	1282.2	1302.0	1274.2	1325.8	1323.8
55°	1268.3	1224.6	1214.7	1226.5	1200.7	1260.3	1280.1	1294.0	1270.2	1306.0	1304.0
57.5°	1244.4	1220.6	1226.5	1244.4	1226.5	1276.1	1286.1	1302.0	1278.2	1294.0	1302.0
60°	1242.5	1242.5	1266.2	1290.0	1278.2	1313.9	1319.8	1317.9	1296.1	1298.0	1302.0
62.5°	1230.5	1260.3	1300.0	1337.7	1333.7	1377.4	1381.4	1355.6	1337.7	1317.9	1311.9
65°	1192.9	1242.5	1300.0	1351.6	1359.5	1427.0	1435.0	1409.1	1397.2	1363.5	1337.7
67.5°	1109.5	1173.0	1240.4	1304.0	1317.9	1409.1	1427.0	1436.9	1442.9	1421.1	1387.3
70°	968.5	1034.0	1103.6	1176.9	1196.8	1298.0	1335.8	1381.4	1417.1	1448.8	1436.9
72.5°	788.0	847.5	907.1	974.5	1004.2	1109.5	1159.1	1238.5	1294.0	1375.5	1409.1
75°	625.2	660.9	696.6	738.4	762.1	865.3	926.9	1022.1	1097.5	1210.7	1286.1
77.5°	492.2	510.0	527.9	545.8	555.8	613.3	662.9	758.2	845.5	988.4	1099.6
80°	379.1	389.0	391.0	396.9	393.0	420.7	438.6	496.1	571.6	712.5	843.5
82.5°	244.1	252.1	256.0	266.0	246.1	281.8	293.7	299.7	339.4	442.6	535.9
85°	137.0	138.9	141.0	144.8	117.1	152.8	154.8	144.8	141.0	182.6	206.4
87.5°	33.8	31.7	33.8	33.8	13.9	31.7	31.7	21.8	15.9	29.8	23.8
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: P196284

CATALOG NUMBER: NAV-AF-06-D-UNV-T2R-800

CANDELA DISTRIBUTION (continued):

	135°	145°	155°	165°	175°	180°
0°	2703.2	2703.2	2703.2	2703.2	2703.2	2703.2
2.5°	2490.9	2486.9	2488.8	2478.9	2474.9	2477.0
5°	2451.1	2443.2	2443.2	2437.3	2429.3	2429.3
7.5°	2469.0	2453.1	2447.2	2435.2	2423.4	2425.3
10°	2496.8	2469.0	2449.1	2431.2	2417.4	2417.4
12.5°	2514.6	2465.0	2435.2	2411.4	2395.5	2395.5
15°	2518.6	2443.2	2399.5	2373.8	2357.9	2357.9
17.5°	2494.8	2399.5	2344.0	2310.2	2292.3	2296.3
20°	2435.2	2318.2	2252.6	2216.9	2199.0	2201.1
22.5°	2341.9	2207.0	2131.6	2089.9	2072.1	2072.1
25°	2215.0	2068.1	1986.7	1953.0	1937.1	1937.1
27.5°	2070.0	1919.3	1847.8	1822.0	1812.1	1812.1
30°	1907.3	1782.3	1730.7	1712.8	1697.0	1697.0
32.5°	1770.4	1681.0	1663.2	1639.4	1597.7	1595.7
35°	1661.2	1651.2	1637.4	1565.9	1506.4	1498.5
37.5°	1601.6	1661.2	1573.9	1450.9	1403.2	1401.2
40°	1569.9	1625.5	1474.7	1415.2	1409.1	1409.1
42.5°	1494.5	1534.2	1468.7	1435.0	1435.0	1436.9
45°	1415.2	1448.8	1482.6	1452.8	1462.7	1464.8
47.5°	1359.5	1427.0	1482.6	1456.8	1476.6	1488.5
50°	1307.9	1407.2	1452.8	1452.8	1474.7	1476.6
52.5°	1296.1	1379.3	1425.1	1446.9	1448.8	1438.9
55°	1298.0	1357.6	1403.2	1431.0	1419.0	1419.0
57.5°	1296.1	1345.7	1385.4	1395.3	1401.2	1401.2
60°	1298.0	1329.7	1361.5	1357.6	1377.4	1377.4
62.5°	1304.0	1307.9	1323.8	1319.8	1349.6	1349.6
65°	1317.9	1280.1	1270.2	1274.2	1309.9	1307.9
67.5°	1343.6	1242.5	1210.7	1212.7	1264.3	1256.3
70°	1381.4	1190.8	1143.2	1131.3	1218.6	1204.7
72.5°	1393.3	1131.3	1055.9	1043.9	1095.6	1055.9
75°	1337.7	1083.6	962.6	922.9	901.1	889.1
77.5°	1192.9	1053.8	865.3	781.9	748.3	740.3
80°	988.4	992.4	738.4	639.0	742.3	740.3
82.5°	746.2	857.4	591.5	553.7	537.9	448.6
85°	361.2	645.1	454.5	381.0	228.2	216.4
87.5°	31.7	270.0	262.0	170.7	77.4	73.4
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)