

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: P196285

Luminaire Tested: **NAV-AF-01-D-UNV-T2R**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196285
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-01-D-UNV-T2R
Description: NAVION ROADWAY AND AREA LUMINAIRE
(1) 70 CRI, 4000K, 1050mA LIGHTSQUARE WITH 16 LEDS EACH AND TYPE II
ROADWAY OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6548.9 lumens
Efficiency: N/A
Efficacy: 111.0 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type II - Short - Semi-Cutoff
BUG Rating: B1 - U0 - G1

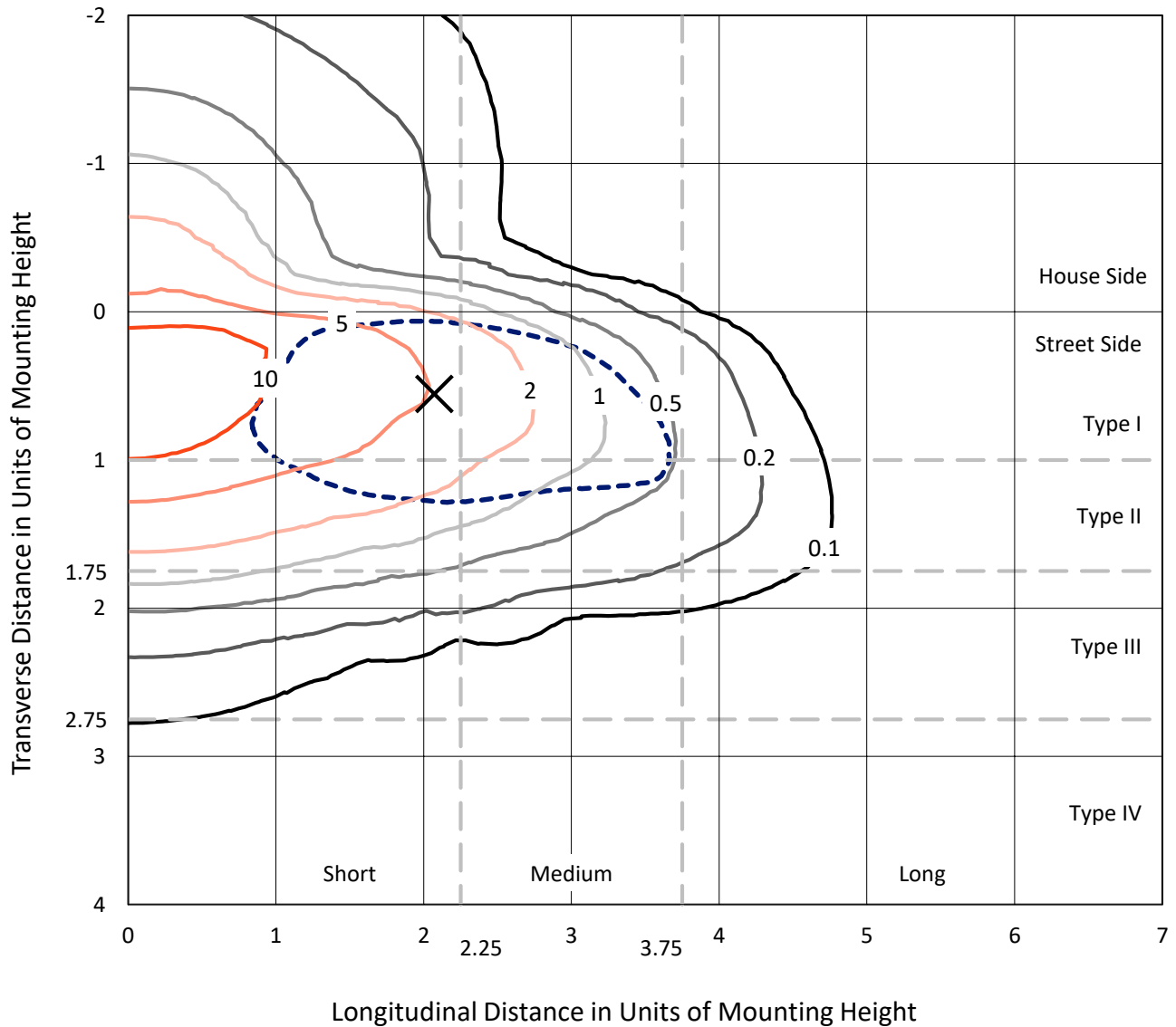
Input Watts (W): 59
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



REPORT NUMBER: P196285
 CATALOG NUMBER: NAV-AF-01-D-UNV-T2R

Iso-Footcandle Lines of Horizontal Illumination

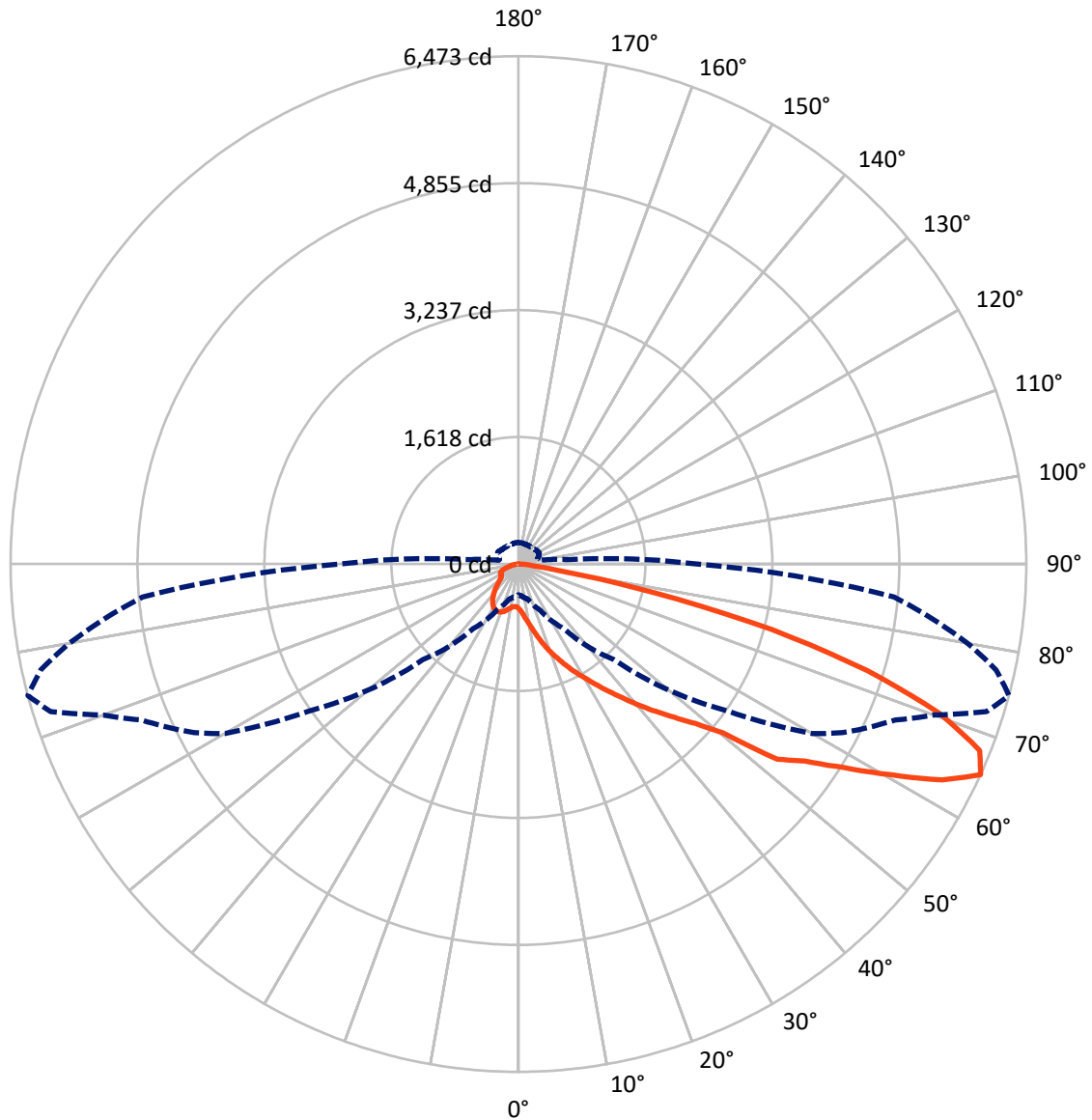
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 16.3 fc
 Type II - Short - Semi-Cutoff

REPORT NUMBER: P196285
CATALOG NUMBER: NAV-AF-01-D-UNV-T2R

Luminous Intensity Polar Plot



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

REPORT NUMBER: P196285

CATALOG NUMBER: NAV-AF-01-D-UNV-T2R

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	984.1	0.0	984.1
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	5564.8	0.0	5564.8
	% Fixture	85.0	0.0	85.0
Total	Lumens	6548.9	0.0	6548.9
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	67.0	1.0
10°-20°	255.9	3.9
20°-30°	516.4	7.9
30°-40°	876.9	13.4
40°-50°	1223.1	18.7
50°-60°	1499.0	22.9
60°-70°	1410.4	21.5
70°-80°	618.5	9.4
80°-90°	81.8	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°	6548.9	100.0
0°-180°	6548.9	100.0



REPORT NUMBER: P196285

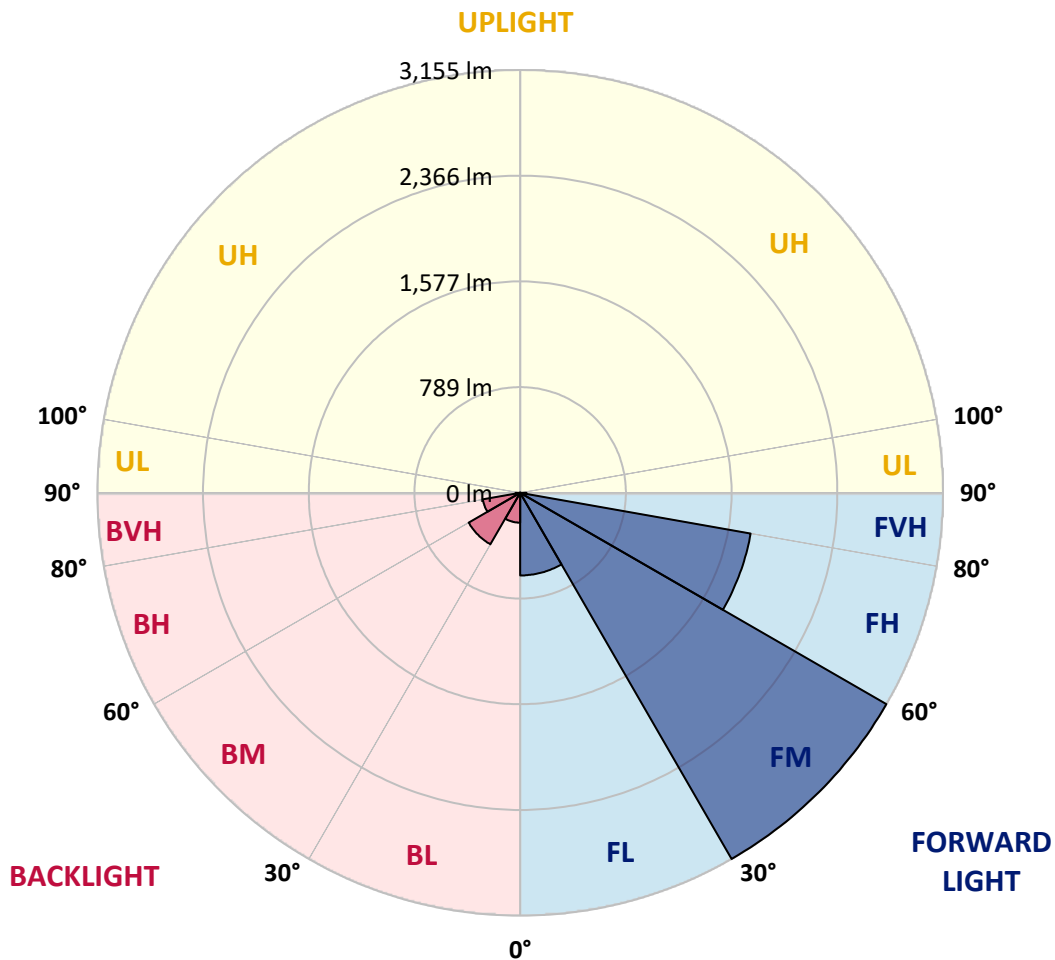
CATALOG NUMBER: NAV-AF-01-D-UNV-T2R

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	616.4	9.4			
FM	(30°-60°)	3155.0	48.2			
FH	(60°-80°)	1746.0	26.7			G1/1800
FVH	(80°-90°)	47.4	0.7			G1/100
BL	(0°-30°)	222.8	3.4	B1/500		
BM	(30°-60°)	444.1	6.8	B1/1000		
BH	(60°-80°)	282.8	4.3	B1/500		G1/500
BVH	(80°-90°)	34.4	0.5			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B1-U0-G1

Type II Short





REPORT NUMBER: P196285

CATALOG NUMBER: NAV-AF-01-D-UNV-T2R

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	57.5°	60°	62.5°	65°
0°	567.4	567.4	567.4	567.4	567.4	567.4	567.4	567.4	567.4	567.4	567.4
2.5°	714.5	706.1	707.0	695.3	678.2	659.5	644.0	635.8	628.7	626.6	614.9
5°	934.5	924.0	920.2	893.6	853.7	806.2	759.0	740.7	725.8	716.6	694.1
7.5°	1114.4	1109.0	1104.1	1079.4	1039.8	979.1	903.2	876.2	851.1	823.7	796.6
10°	1237.0	1234.8	1232.8	1215.7	1182.7	1129.8	1048.2	1018.7	987.4	952.4	917.0
12.5°	1329.4	1329.4	1331.1	1316.9	1296.9	1256.1	1181.9	1154.4	1122.8	1086.1	1045.7
15°	1391.5	1393.2	1401.9	1406.0	1395.6	1369.4	1304.4	1280.2	1250.3	1214.0	1174.0
17.5°	1432.7	1436.0	1449.0	1462.7	1476.0	1466.9	1418.5	1396.0	1369.0	1335.7	1298.1
20°	1528.6	1524.4	1524.8	1520.6	1540.3	1547.3	1520.6	1501.9	1480.2	1449.8	1415.7
22.5°	1729.8	1721.8	1701.5	1649.4	1625.6	1623.1	1607.3	1597.3	1580.7	1561.4	1527.3
25°	1992.2	1983.1	1942.7	1856.9	1786.0	1720.6	1691.4	1685.2	1674.4	1661.5	1636.8
27.5°	2263.5	2253.5	2201.4	2093.1	2000.6	1868.5	1777.7	1769.4	1759.4	1754.0	1742.3
30°	2502.1	2491.3	2440.0	2330.1	2218.5	2060.9	1893.9	1864.7	1847.7	1849.3	1842.6
32.5°	2711.7	2702.1	2644.6	2532.6	2419.3	2266.3	2044.8	1999.4	1961.0	1946.8	1951.8
35°	2887.5	2878.8	2815.9	2702.9	2588.8	2461.7	2238.8	2170.5	2108.1	2068.9	2064.3
37.5°	2990.9	2985.9	2941.7	2845.8	2732.5	2639.2	2456.3	2380.5	2288.4	2231.4	2206.4
40°	2985.0	2990.4	2982.9	2939.7	2851.7	2783.8	2683.0	2608.0	2518.0	2433.0	2382.1
42.5°	2900.1	2907.5	2941.3	2963.8	2940.1	2898.7	2880.8	2825.1	2744.3	2654.3	2583.9
45°	2783.3	2790.0	2833.8	2915.0	2982.9	2994.6	3054.2	3026.3	2958.0	2881.2	2803.8
47.5°	2604.6	2617.5	2668.4	2797.6	2959.2	3071.7	3199.6	3212.5	3172.9	3109.6	3037.1
50°	2345.9	2363.0	2434.2	2617.9	2869.2	3150.8	3415.8	3464.9	3449.1	3384.9	3311.6
52.5°	2081.0	2098.1	2193.0	2388.4	2724.2	3183.3	3628.7	3754.5	3845.4	3911.6	3924.4
55°	1805.2	1824.3	1928.5	2153.4	2530.9	3142.1	3780.7	3923.6	4015.7	4084.8	4112.8
57.5°	1494.0	1515.6	1616.5	1844.0	2257.7	2976.3	3949.9	4152.4	4289.4	4396.1	4456.1
60°	1136.9	1164.0	1268.6	1497.7	1898.5	2658.9	4025.3	4324.8	4542.7	4702.7	4797.7
62.5°	720.8	748.2	856.9	1094.9	1489.8	2225.1	3812.0	4249.0	4620.7	4857.3	5031.4
65°	393.3	405.4	465.7	644.9	1004.4	1726.4	3271.2	3786.6	4322.0	4657.3	4924.8
67.5°	294.9	296.7	302.9	346.6	534.9	1165.7	2557.6	3029.6	3624.1	4055.7	4375.3
70°	258.3	258.3	259.1	259.5	290.4	631.6	1732.7	2167.2	2712.1	3148.7	3545.8
72.5°	231.6	229.1	228.3	223.3	227.5	323.7	943.2	1333.6	1793.1	2283.0	2653.4
75°	200.0	199.6	199.6	194.6	197.0	227.9	409.1	640.0	996.1	1452.3	1816.9
77.5°	172.9	170.0	170.4	167.5	175.4	174.5	194.2	263.7	433.7	762.8	1065.3
80°	142.5	140.3	141.7	139.9	152.5	129.2	130.8	161.2	215.4	334.5	471.6
82.5°	105.4	106.3	114.2	113.3	128.3	87.1	95.9	120.4	145.0	166.6	181.3
85°	61.7	62.9	82.0	86.2	94.1	45.8	58.7	71.6	80.8	89.6	93.3
87.5°	6.6	8.8	45.8	47.1	42.0	13.7	23.7	30.0	32.1	34.2	30.0
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: P196285

CATALOG NUMBER: NAV-AF-01-D-UNV-T2R

CANDELA DISTRIBUTION (continued):

	67.5°	70°	72.5°	75°	77.5°	80°	85°	90°	95°	100°	102.5°
0°	567.4	567.4	567.4	567.4	567.4	567.4	567.4	567.4	567.4	567.4	567.4
2.5°	611.2	605.8	600.0	596.6	590.8	585.7	576.6	569.1	560.8	555.0	552.4
5°	682.8	669.9	656.1	646.2	633.6	622.9	602.0	577.0	569.1	552.4	548.3
7.5°	776.1	752.8	729.5	710.3	688.7	670.7	635.8	590.8	584.9	558.2	552.4
10°	885.7	851.5	816.9	787.4	755.8	728.2	676.6	613.3	607.0	572.9	567.0
12.5°	1008.2	966.6	922.0	877.8	840.4	801.6	731.1	648.2	638.2	597.8	589.9
15°	1134.5	1089.4	1037.8	984.5	938.3	887.0	798.2	694.1	675.8	628.3	617.5
17.5°	1259.0	1210.3	1156.1	1096.5	1042.4	981.1	870.7	745.3	713.6	658.3	644.5
20°	1379.4	1329.8	1272.8	1214.4	1146.9	1077.0	944.9	795.8	747.4	683.2	665.3
22.5°	1489.0	1446.5	1389.4	1322.4	1254.0	1175.3	1020.3	846.2	776.9	702.4	679.4
25°	1604.4	1565.6	1509.0	1444.4	1364.8	1277.4	1098.1	894.1	800.8	712.8	684.5
27.5°	1721.0	1687.7	1634.4	1566.4	1481.0	1384.0	1177.3	938.3	819.9	716.2	682.0
30°	1845.6	1819.7	1770.6	1694.8	1608.5	1501.1	1263.5	981.5	832.0	711.6	670.7
32.5°	1963.5	1962.6	1919.0	1840.2	1747.3	1628.9	1354.4	1025.3	838.2	698.7	651.2
35°	2086.0	2103.1	2070.1	1995.2	1897.3	1766.0	1454.8	1072.0	838.6	675.8	625.7
37.5°	2225.1	2255.5	2241.0	2169.7	2066.8	1922.2	1572.7	1124.4	836.2	644.0	588.7
40°	2383.5	2425.1	2424.7	2364.7	2254.7	2097.3	1709.8	1183.1	830.3	604.5	544.9
42.5°	2564.6	2614.3	2628.0	2568.8	2457.6	2288.4	1866.9	1247.8	821.1	565.4	498.7
45°	2772.1	2815.9	2841.8	2786.7	2675.0	2496.7	2047.2	1321.0	809.9	515.0	445.8
47.5°	2994.2	3045.0	3083.8	3036.7	2917.6	2734.2	2260.9	1415.7	805.7	457.5	388.7
50°	3269.6	3322.0	3405.8	3384.5	3319.2	3171.7	2713.0	1639.0	807.4	402.8	340.7
52.5°	3952.8	4073.2	4179.1	4131.9	3976.5	3723.6	3080.4	1763.1	772.4	358.2	307.5
55°	4159.0	4295.7	4451.9	4432.3	4283.2	4028.2	3370.8	1866.9	738.7	325.8	285.8
57.5°	4519.8	4681.0	4899.3	4895.2	4712.3	4425.3	3744.5	1991.0	724.0	307.1	275.0
60°	4901.9	5107.3	5408.9	5455.9	5257.3	4958.5	4186.1	2143.5	726.2	296.7	268.7
62.5°	5180.9	5482.2	5920.8	6061.7	5827.5	5498.5	4644.4	2295.9	713.6	284.6	261.3
65°	5198.0	5631.8	6254.2	6473.3	6236.2	5813.4	4806.0	2265.9	638.6	268.3	249.1
67.5°	4781.5	5346.4	6102.5	6342.9	6100.5	5619.3	4522.8	1980.9	519.1	240.0	228.3
70°	3982.3	4638.2	5423.1	5690.9	5490.5	5003.5	3936.1	1582.3	387.9	202.4	197.0
72.5°	3077.5	3689.1	4402.0	4649.8	4496.5	4068.2	3104.6	1153.2	277.0	164.2	160.0
75°	2200.2	2720.8	3238.4	3332.9	3181.7	2788.4	2014.3	720.4	194.2	134.5	128.7
77.5°	1362.4	1701.1	1886.8	1765.2	1572.3	1306.9	819.9	355.8	129.2	109.6	103.7
80°	604.5	709.5	662.5	590.3	466.2	383.3	250.4	157.9	83.4	84.6	81.2
82.5°	203.3	214.9	209.1	207.9	187.5	164.2	106.3	68.3	46.6	54.1	52.9
85°	99.1	103.7	104.1	107.9	93.7	72.9	28.7	27.1	19.9	29.2	30.4
87.5°	30.0	30.4	27.5	30.0	24.1	16.7	5.4	7.5	3.8	7.1	7.1
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: P196285

CATALOG NUMBER: NAV-AF-01-D-UNV-T2R

CANDELA DISTRIBUTION (continued):

	105°	107.5°	110°	112.5°	115°	117.5°	120°	122.5°	125°	127.5°	130°
0°	567.4	567.4	567.4	567.4	567.4	567.4	567.4	567.4	567.4	567.4	567.4
2.5°	547.9	546.2	543.3	539.9	539.1	534.9	533.7	531.6	530.3	528.3	526.6
5°	542.9	539.9	536.6	532.9	532.9	527.0	524.5	522.0	522.0	518.2	516.6
7.5°	547.9	544.1	540.3	537.0	538.3	531.6	529.1	526.6	526.2	522.4	520.8
10°	562.0	558.2	553.7	550.3	549.1	543.7	540.7	537.0	534.5	532.0	529.5
12.5°	583.7	578.7	572.9	565.8	562.8	558.2	553.7	548.7	542.9	540.3	536.6
15°	609.5	601.2	593.2	584.5	576.6	572.0	565.8	557.8	549.9	546.6	541.6
17.5°	630.8	622.0	610.7	600.4	586.2	582.5	573.7	564.1	551.2	549.9	542.5
20°	648.7	635.4	621.5	609.1	587.4	585.3	574.5	563.2	544.9	544.9	535.7
22.5°	658.7	640.4	624.1	607.4	580.3	578.7	566.2	552.8	530.3	531.2	520.0
25°	660.3	638.2	617.9	597.8	566.6	563.6	547.9	533.3	508.7	507.0	495.3
27.5°	653.7	627.8	604.1	579.9	546.2	539.9	522.4	504.9	480.8	476.6	464.1
30°	638.2	607.8	581.1	553.2	517.8	507.9	489.5	471.6	447.0	441.6	429.9
32.5°	613.7	579.1	549.5	521.6	482.4	469.9	451.6	433.7	409.9	405.8	395.0
35°	581.1	542.5	511.2	481.6	442.4	429.5	412.0	396.2	374.5	372.9	365.4
37.5°	540.3	499.9	466.6	438.2	401.2	394.6	376.7	365.0	347.1	348.7	344.9
40°	494.1	452.9	421.1	396.2	364.1	358.2	347.5	338.7	323.3	327.9	328.3
42.5°	447.4	406.2	377.5	355.0	327.4	323.7	316.2	311.2	299.5	308.7	312.4
45°	394.6	356.2	331.6	314.6	294.1	294.1	290.4	290.0	282.0	294.9	298.7
47.5°	343.3	313.3	296.2	285.8	271.6	278.3	277.0	280.4	274.6	287.9	291.2
50°	304.5	283.7	273.3	268.3	258.3	268.7	271.2	275.8	270.8	282.4	285.0
52.5°	280.0	266.2	260.3	259.1	252.1	264.9	269.1	273.3	267.5	278.3	277.8
55°	266.2	257.1	254.9	257.5	252.1	264.5	268.7	271.6	266.6	274.2	273.7
57.5°	261.3	256.2	257.5	261.3	257.5	267.9	270.0	273.3	268.3	271.6	273.3
60°	260.8	260.8	265.8	270.8	268.3	275.8	277.0	276.6	272.0	272.5	273.3
62.5°	258.3	264.5	272.9	280.8	280.0	289.1	290.0	284.6	280.8	276.6	275.4
65°	250.4	260.8	272.9	283.7	285.4	299.5	301.3	295.8	293.3	286.2	280.8
67.5°	232.9	246.2	260.3	273.7	276.6	295.8	299.5	301.7	302.9	298.3	291.2
70°	203.3	217.1	231.6	247.0	251.2	272.5	280.4	290.0	297.5	304.1	301.7
72.5°	165.4	177.9	190.4	204.6	210.8	232.9	243.3	259.9	271.6	288.7	295.8
75°	131.2	138.7	146.2	155.0	160.0	181.7	194.6	214.5	230.4	254.1	270.0
77.5°	103.3	107.1	110.8	114.6	116.6	128.7	139.1	159.2	177.5	207.5	230.8
80°	79.6	81.6	82.0	83.4	82.4	88.3	92.1	104.1	120.0	149.6	177.1
82.5°	51.2	52.9	53.7	55.9	51.7	59.1	61.7	62.9	71.2	92.9	112.5
85°	28.7	29.2	29.6	30.4	24.6	32.1	32.5	30.4	29.6	38.4	43.4
87.5°	7.1	6.6	7.1	7.1	3.0	6.6	6.6	4.6	3.4	6.2	5.0
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: P196285

CATALOG NUMBER: NAV-AF-01-D-UNV-T2R

CANDELA DISTRIBUTION (continued):

	135°	145°	155°	165°	175°	180°
0°	567.4	567.4	567.4	567.4	567.4	567.4
2.5°	522.8	522.0	522.4	520.4	519.6	520.0
5°	514.5	512.8	512.8	511.6	509.9	509.9
7.5°	518.2	515.0	513.7	511.2	508.7	509.1
10°	524.1	518.2	514.1	510.4	507.4	507.4
12.5°	527.8	517.4	511.2	506.2	502.9	502.9
15°	528.7	512.8	503.7	498.3	494.9	494.9
17.5°	523.6	503.7	492.0	485.0	481.2	482.0
20°	511.2	486.6	472.8	465.3	461.6	462.1
22.5°	491.6	463.3	447.4	438.6	435.0	435.0
25°	464.9	434.1	417.1	409.9	406.6	406.6
27.5°	434.5	402.8	387.9	382.5	380.3	380.3
30°	400.4	374.1	363.2	359.6	356.2	356.2
32.5°	371.6	352.9	349.1	344.1	335.3	334.9
35°	348.7	346.6	343.7	328.7	316.2	314.6
37.5°	336.2	348.7	330.4	304.5	294.5	294.1
40°	329.5	341.2	309.5	297.1	295.8	295.8
42.5°	313.7	322.0	308.3	301.3	301.3	301.7
45°	297.1	304.1	311.2	304.9	307.1	307.5
47.5°	285.4	299.5	311.2	305.8	310.0	312.4
50°	274.6	295.4	304.9	304.9	309.5	310.0
52.5°	272.0	289.5	299.1	303.7	304.1	302.1
55°	272.5	285.0	294.5	300.3	297.9	297.9
57.5°	272.0	282.4	290.8	292.9	294.1	294.1
60°	272.5	279.2	285.8	285.0	289.1	289.1
62.5°	273.7	274.6	277.8	277.0	283.3	283.3
65°	276.6	268.7	266.6	267.5	275.0	274.6
67.5°	282.0	260.8	254.1	254.5	265.4	263.7
70°	290.0	250.0	240.0	237.4	255.8	252.9
72.5°	292.5	237.4	221.7	219.1	230.0	221.7
75°	280.8	227.5	202.0	193.7	189.1	186.7
77.5°	250.4	221.3	181.7	164.2	157.0	155.4
80°	207.5	208.3	155.0	134.1	155.8	155.4
82.5°	156.6	179.9	124.2	116.2	112.9	94.1
85°	75.8	135.4	95.4	80.0	47.9	45.4
87.5°	6.6	56.7	55.0	35.8	16.3	15.4
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)