

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: P195800

Luminaire Tested: **NAV-AF-02-D-UNV-T2R-7050-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195800
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-02-D-UNV-T2R-7050-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 5000K, 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: 10313 lumens
Efficiency: N/A
Efficacy: 121.3 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type II - Short - Semi-Cutoff
BUG Rating: B1 - U0 - G2

Input Watts (W): 85
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

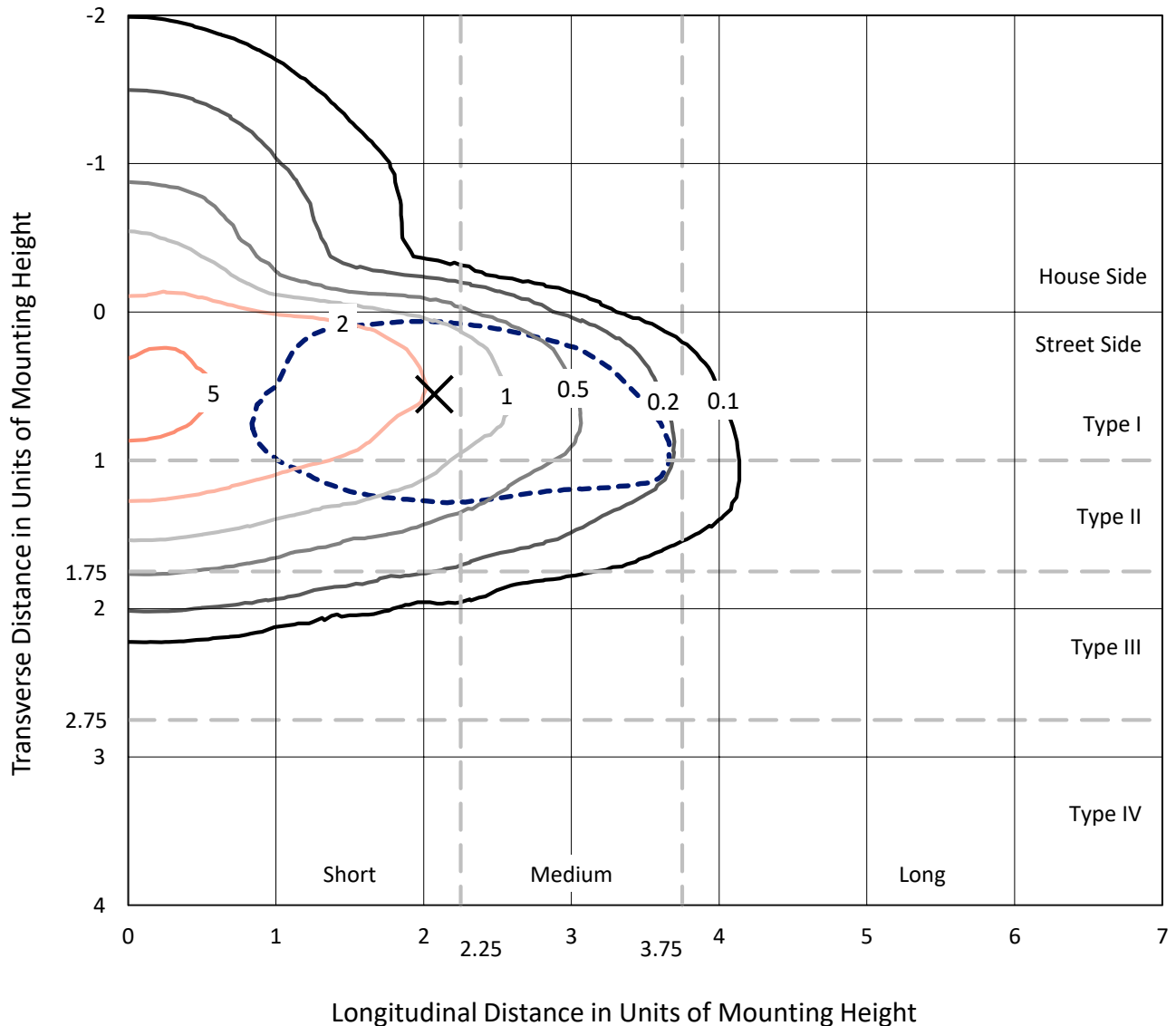


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Iso-Footcandle Lines of Horizontal Illumination

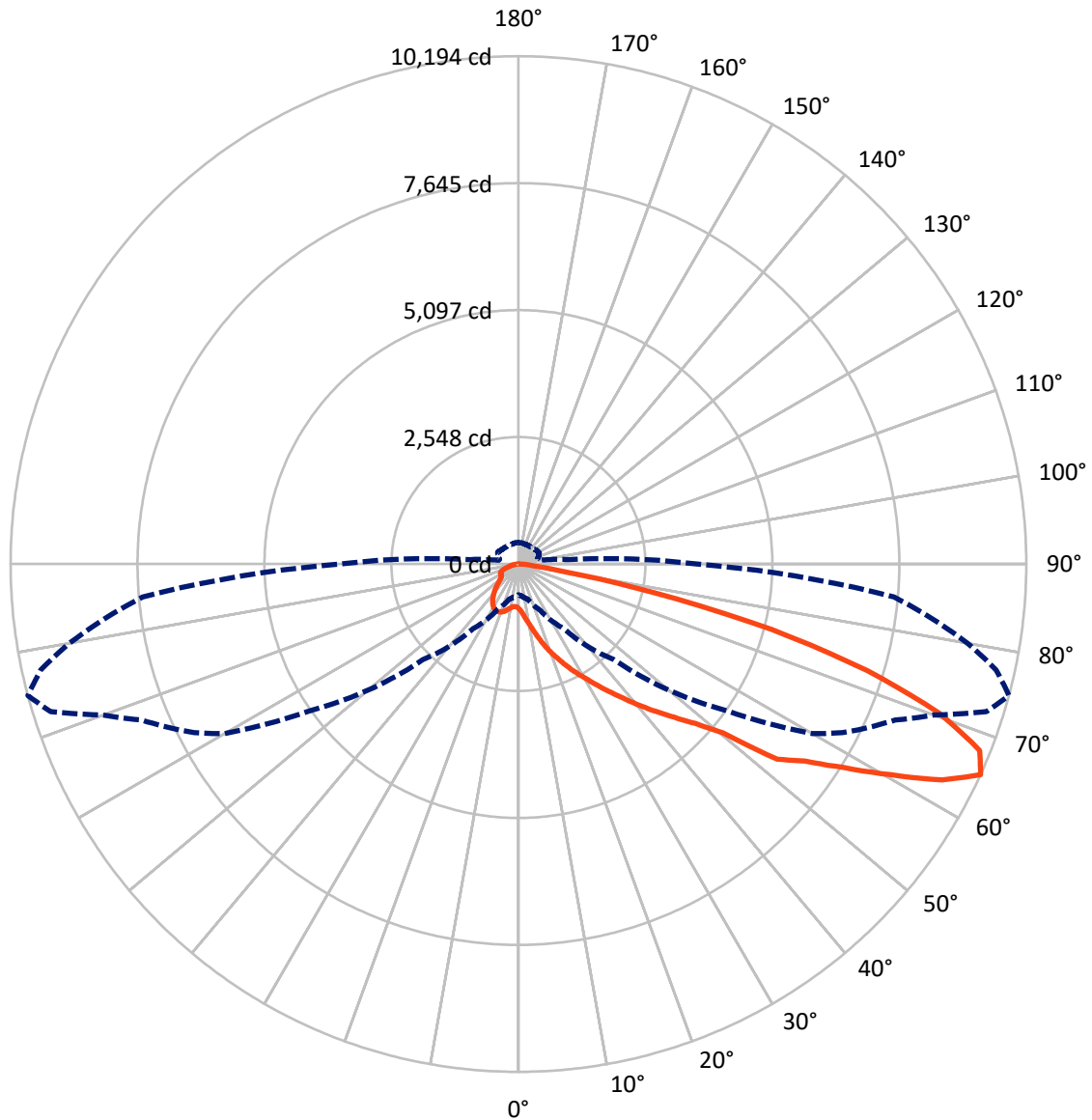
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 6.4 fc
 Type II - Short - Semi-Cutoff

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Luminous Intensity Polar Plot



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

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1549.7	0.0	1549.7
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	8763.3	0.0	8763.3
	% Fixture	85.0	0.0	85.0
Total	Lumens	10313.0	0.0	10313.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	105.5	1.0
10°-20°	402.9	3.9
20°-30°	813.1	7.9
30°-40°	1380.9	13.4
40°-50°	1926.1	18.7
50°-60°	2360.6	22.9
60°-70°	2221.0	21.5
70°-80°	973.9	9.4
80°-90°	128.9	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°	10313.0	100.0
0°-180°	10313.0	100.0



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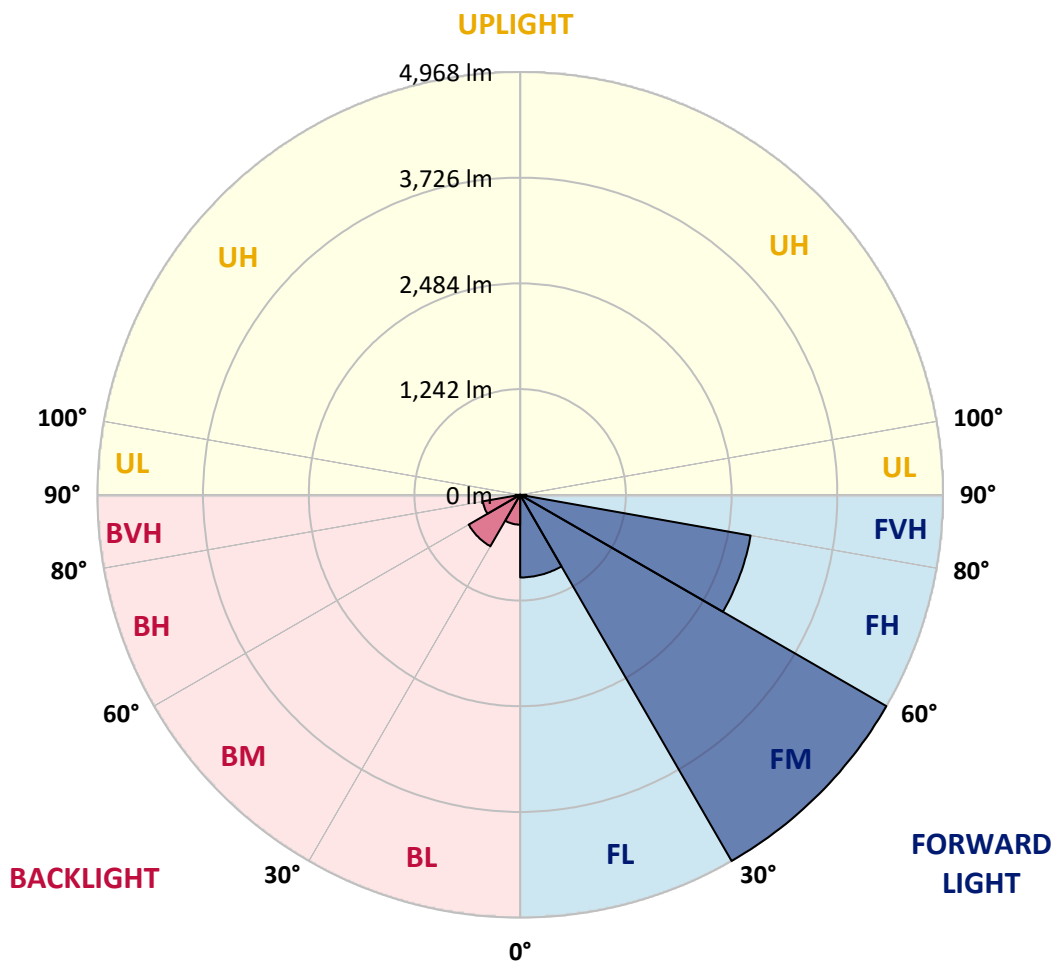
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	970.7	9.4			
FM	(30°-60°)	4968.3	48.2			
FH	(60°-80°)	2749.5	26.7			G2/5000
FVH	(80°-90°)	74.7	0.7			G1/100
BL	(0°-30°)	350.8	3.4	B1/500		
BM	(30°-60°)	699.3	6.8	B1/1000		
BH	(60°-80°)	445.4	4.3	B1/500		G1/500
BVH	(80°-90°)	54.2	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-G2

Type II Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	57.5°	60°	62.5°	65°
0°	893.6	893.6	893.6	893.6	893.6	893.6	893.6	893.6	893.6	893.6	893.6
2.5°	1125.1	1112.0	1113.3	1095.0	1068.1	1038.5	1014.3	1001.2	990.0	986.7	968.3
5°	1471.6	1455.1	1449.2	1407.3	1344.3	1269.5	1195.3	1166.5	1142.9	1128.4	1093.0
7.5°	1755.0	1746.4	1738.6	1699.9	1637.5	1541.7	1422.3	1379.7	1340.3	1297.0	1254.4
10°	1947.9	1944.6	1941.3	1914.4	1862.6	1779.2	1650.7	1604.1	1554.9	1499.8	1444.0
12.5°	2093.5	2093.5	2096.1	2073.8	2042.3	1978.0	1861.3	1818.0	1768.1	1710.4	1646.7
15°	2191.3	2193.9	2207.7	2214.2	2197.8	2156.5	2054.1	2016.1	1968.8	1911.8	1848.8
17.5°	2256.2	2261.5	2281.8	2303.4	2324.4	2310.0	2233.9	2198.5	2155.8	2103.3	2044.3
20°	2407.1	2400.5	2401.2	2394.6	2425.5	2436.6	2394.6	2365.1	2331.0	2283.1	2229.3
22.5°	2724.0	2711.5	2679.4	2597.4	2560.0	2556.0	2531.1	2515.3	2489.1	2458.9	2405.1
25°	3137.3	3122.9	3059.2	2924.1	2812.5	2709.5	2663.6	2653.8	2636.7	2616.4	2577.7
27.5°	3564.4	3548.6	3466.6	3296.1	3150.4	2942.4	2799.4	2786.3	2770.6	2762.0	2743.7
30°	3940.3	3923.3	3842.6	3669.4	3493.5	3245.5	2982.5	2936.5	2909.6	2912.3	2901.8
32.5°	4270.3	4255.2	4164.7	3988.2	3809.8	3569.0	3220.0	3148.4	3088.1	3065.8	3073.7
35°	4547.2	4533.4	4434.3	4256.5	4076.8	3876.7	3525.7	3418.1	3319.7	3258.0	3250.8
37.5°	4709.9	4702.0	4632.5	4481.6	4303.1	4156.2	3868.1	3748.7	3603.8	3513.9	3474.5
40°	4700.7	4709.2	4697.4	4629.2	4490.8	4383.8	4225.0	4107.0	3965.2	3831.4	3751.4
42.5°	4566.9	4578.7	4631.8	4667.2	4629.8	4564.9	4536.7	4448.8	4321.5	4179.8	4068.9
45°	4383.2	4393.7	4462.5	4590.5	4697.4	4715.8	4809.6	4765.6	4658.1	4537.3	4415.3
47.5°	4101.7	4122.0	4202.1	4405.5	4660.0	4837.2	5038.6	5058.9	4996.6	4896.9	4782.7
50°	3694.3	3721.2	3833.4	4122.7	4518.3	4961.8	5379.1	5456.5	5431.5	5330.5	5215.0
52.5°	3277.0	3303.9	3453.5	3761.2	4290.0	5013.0	5714.3	5912.4	6055.5	6159.8	6180.1
55°	2842.7	2872.9	3036.9	3391.2	3985.6	4948.0	5953.8	6178.8	6323.8	6432.7	6476.7
57.5°	2352.6	2386.8	2545.5	2903.7	3555.2	4686.9	6220.1	6539.0	6754.8	6922.8	7017.3
60°	1790.4	1833.0	1997.7	2358.5	2989.7	4187.0	6338.9	6810.6	7153.7	7405.6	7555.2
62.5°	1135.0	1178.3	1349.5	1724.1	2346.1	3504.0	6003.0	6691.2	7276.4	7649.0	7923.3
65°	619.3	638.3	733.5	1015.6	1581.8	2718.7	5151.4	5963.0	6806.0	7334.1	7755.3
67.5°	464.5	467.1	477.0	545.8	842.4	1835.7	4027.6	4770.9	5707.1	6386.8	6890.0
70°	406.8	406.8	408.1	408.7	457.3	994.6	2728.6	3412.8	4271.0	4958.5	5583.8
72.5°	364.8	360.8	359.5	351.6	358.2	509.8	1485.3	2100.1	2823.7	3595.2	4178.5
75°	314.9	314.3	314.3	306.4	310.3	358.9	644.3	1007.7	1568.6	2287.0	2861.1
77.5°	272.3	267.7	268.3	263.7	276.2	274.9	305.7	415.3	683.0	1201.3	1677.6
80°	224.4	221.1	223.1	220.4	240.1	203.4	206.0	253.9	339.2	526.8	742.7
82.5°	166.0	167.3	179.8	178.4	202.1	137.1	150.9	189.6	228.3	262.4	285.4
85°	97.1	99.1	129.2	135.8	148.3	72.2	92.5	112.8	127.3	141.1	147.0
87.5°	10.5	13.8	72.2	74.1	66.3	21.7	37.4	47.2	50.5	53.8	47.2
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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CANDELA DISTRIBUTION (continued):

	67.5°	70°	72.5°	75°	77.5°	80°	85°	90°	95°	100°	102.5°
0°	893.6	893.6	893.6	893.6	893.6	893.6	893.6	893.6	893.6	893.6	893.6
2.5°	962.4	953.9	944.7	939.5	930.3	922.4	908.0	896.2	883.1	873.9	869.9
5°	1075.3	1054.9	1033.3	1017.6	997.9	980.8	948.0	908.6	896.2	869.9	863.4
7.5°	1222.2	1185.5	1148.8	1118.6	1084.5	1056.3	1001.2	930.3	921.1	879.1	869.9
10°	1394.8	1341.0	1286.5	1240.0	1190.1	1146.8	1065.4	965.7	955.9	902.1	892.9
12.5°	1587.7	1522.1	1451.9	1382.3	1323.3	1262.3	1151.4	1020.8	1005.1	941.5	929.0
15°	1786.5	1715.6	1634.3	1550.3	1477.5	1396.8	1257.0	1093.0	1064.1	989.3	972.3
17.5°	1982.6	1905.9	1820.6	1726.8	1641.5	1545.0	1371.2	1173.7	1123.8	1036.6	1014.9
20°	2172.2	2094.2	2004.3	1912.4	1806.1	1695.9	1488.0	1253.1	1177.0	1075.9	1047.7
22.5°	2344.8	2277.9	2188.0	2082.3	1974.8	1850.8	1606.7	1332.5	1223.6	1106.1	1070.0
25°	2526.5	2465.5	2376.3	2274.6	2149.3	2011.5	1729.4	1407.9	1261.0	1122.5	1077.9
27.5°	2710.2	2657.7	2573.7	2466.8	2332.3	2179.4	1854.0	1477.5	1291.1	1127.8	1074.0
30°	2906.4	2865.7	2788.3	2668.9	2533.1	2363.8	1989.8	1545.7	1310.2	1120.6	1056.3
32.5°	3092.0	3090.7	3021.8	2897.8	2751.5	2565.2	2132.9	1614.6	1320.0	1100.2	1025.4
35°	3284.9	3311.8	3260.0	3141.9	2987.7	2781.1	2291.0	1688.1	1320.7	1064.1	985.4
37.5°	3504.0	3551.9	3529.0	3416.8	3254.7	3027.1	2476.6	1770.7	1316.7	1014.3	927.0
40°	3753.3	3818.9	3818.3	3723.8	3550.6	3302.6	2692.5	1863.2	1307.5	951.9	858.1
42.5°	4038.7	4116.8	4138.4	4045.3	3870.1	3603.8	2939.8	1964.9	1293.1	890.3	785.3
45°	4365.4	4434.3	4475.0	4388.4	4212.6	3931.8	3223.9	2080.4	1275.4	810.9	702.0
47.5°	4715.1	4795.2	4856.2	4782.0	4594.4	4305.7	3560.5	2229.3	1268.8	720.4	612.1
50°	5148.8	5231.4	5363.3	5329.9	5226.9	4994.6	4272.3	2581.0	1271.5	634.4	536.7
52.5°	6224.7	6414.3	6581.0	6506.8	6262.1	5863.9	4850.9	2776.5	1216.3	564.2	484.2
55°	6549.5	6764.7	7010.7	6979.9	6745.0	6343.5	5308.2	2939.8	1163.2	513.0	450.1
57.5°	7117.6	7371.5	7715.3	7708.7	7420.7	6968.7	5896.7	3135.3	1140.2	483.5	433.0
60°	7719.2	8042.7	8517.7	8591.8	8278.9	7808.5	6592.1	3375.4	1143.5	467.1	423.2
62.5°	8158.8	8633.1	9324.0	9545.7	9177.0	8658.7	7313.8	3615.6	1123.8	448.1	411.4
65°	8185.7	8868.7	9848.8	10193.9	9820.6	9154.7	7568.3	3568.3	1005.7	422.5	392.3
67.5°	7529.6	8419.3	9610.0	9988.6	9606.7	8849.0	7122.2	3119.6	817.5	377.9	359.5
70°	6271.3	7304.0	8540.0	8961.8	8646.3	7879.3	6198.5	2491.7	610.8	318.8	310.3
72.5°	4846.3	5809.4	6932.0	7322.3	7080.9	6406.5	4889.0	1816.0	436.3	258.5	251.9
75°	3464.7	4284.8	5099.6	5248.5	5010.4	4391.0	3172.1	1134.3	305.7	211.9	202.7
77.5°	2145.3	2678.7	2971.3	2779.7	2476.0	2058.1	1291.1	560.3	203.4	172.5	163.4
80°	951.9	1117.3	1043.1	929.6	734.1	603.6	394.3	248.6	131.2	133.2	127.9
82.5°	320.2	338.5	329.3	327.4	295.2	258.5	167.3	107.6	73.5	85.3	83.3
85°	156.1	163.4	164.0	169.9	147.6	114.8	45.3	42.6	31.5	45.9	47.9
87.5°	47.2	47.9	43.3	47.2	38.1	26.2	8.5	11.8	5.9	11.2	11.2
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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CANDELA DISTRIBUTION (continued):

	105°	107.5°	110°	112.5°	115°	117.5°	120°	122.5°	125°	127.5°	130°
0°	893.6	893.6	893.6	893.6	893.6	893.6	893.6	893.6	893.6	893.6	893.6
2.5°	862.7	860.1	855.5	850.3	848.9	842.4	840.4	837.1	835.2	831.9	829.3
5°	854.9	850.3	845.0	839.1	839.1	829.9	826.0	822.0	822.0	816.1	813.5
7.5°	862.7	856.8	850.9	845.7	847.6	837.1	833.2	829.3	828.6	822.7	820.1
10°	885.0	879.1	871.9	866.7	864.7	856.2	851.6	845.7	841.7	837.8	833.9
12.5°	919.1	911.3	902.1	890.9	886.3	879.1	871.9	864.0	854.9	850.9	845.0
15°	959.8	946.7	934.2	920.5	908.0	900.8	890.9	878.5	866.0	860.8	852.9
17.5°	993.3	979.5	961.8	945.4	923.1	917.2	903.4	888.3	868.0	866.0	854.2
20°	1021.5	1000.5	978.8	959.2	925.0	921.8	904.7	887.0	858.1	858.1	843.7
22.5°	1037.2	1008.4	982.8	956.5	913.9	911.3	891.6	870.6	835.2	836.5	818.8
25°	1039.9	1005.1	972.9	941.5	892.2	887.7	862.7	839.8	801.1	798.4	780.1
27.5°	1029.4	988.7	951.3	913.2	860.1	850.3	822.7	795.1	757.1	750.5	730.9
30°	1005.1	957.2	915.2	871.3	815.5	799.7	770.9	742.7	704.0	695.4	677.1
32.5°	966.4	911.9	865.3	821.4	759.7	740.0	711.2	683.0	645.6	639.0	621.9
35°	915.2	854.2	805.0	758.4	696.7	676.4	648.8	623.9	589.8	587.2	575.4
37.5°	850.9	787.3	734.8	690.2	631.8	621.3	593.1	574.7	546.5	549.1	543.2
40°	778.1	713.1	663.3	623.9	573.4	564.2	547.2	533.4	509.1	516.3	517.0
42.5°	704.6	639.7	594.4	559.0	515.7	509.8	498.0	490.1	471.7	486.1	492.0
45°	621.3	560.9	522.2	495.3	463.2	463.2	457.3	456.6	444.2	464.5	470.4
47.5°	540.6	493.4	466.5	450.1	427.8	438.3	436.3	441.5	432.3	453.3	458.6
50°	479.6	446.8	430.4	422.5	406.8	423.2	427.1	434.3	426.4	444.8	448.7
52.5°	440.9	419.2	410.0	408.1	396.9	417.3	423.8	430.4	421.2	438.3	437.6
55°	419.2	404.8	401.5	405.4	396.9	416.6	423.2	427.8	419.9	431.7	431.0
57.5°	411.4	403.5	405.4	411.4	405.4	421.8	425.1	430.4	422.5	427.8	430.4
60°	410.7	410.7	418.6	426.4	422.5	434.3	436.3	435.6	428.4	429.1	430.4
62.5°	406.8	416.6	429.7	442.2	440.9	455.3	456.6	448.1	442.2	435.6	433.7
65°	394.3	410.7	429.7	446.8	449.4	471.7	474.3	465.8	461.9	450.7	442.2
67.5°	366.7	387.7	410.0	431.0	435.6	465.8	471.7	475.0	477.0	469.7	458.6
70°	320.2	341.8	364.8	389.0	395.6	429.1	441.5	456.6	468.4	478.9	475.0
72.5°	260.5	280.1	299.8	322.1	332.0	366.7	383.1	409.4	427.8	454.7	465.8
75°	206.7	218.5	230.3	244.1	251.9	286.0	306.4	337.9	362.8	400.2	425.1
77.5°	162.7	168.6	174.5	180.4	183.7	202.7	219.1	250.6	279.5	326.7	363.5
80°	125.3	128.6	129.2	131.2	129.9	139.1	145.0	164.0	188.9	235.5	278.8
82.5°	80.7	83.3	84.6	87.9	81.4	93.2	97.1	99.1	112.2	146.3	177.1
85°	45.3	45.9	46.6	47.9	38.7	50.5	51.2	47.9	46.6	60.4	68.2
87.5°	11.2	10.5	11.2	11.2	4.6	10.5	10.5	7.2	5.2	9.8	7.9
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-02-D-UNV-T2R-7050-800

CANDELA DISTRIBUTION (continued):

	135°	145°	155°	165°	175°	180°
0°	893.6	893.6	893.6	893.6	893.6	893.6
2.5°	823.4	822.0	822.7	819.4	818.1	818.8
5°	810.2	807.6	807.6	805.6	803.0	803.0
7.5°	816.1	810.9	808.9	805.0	801.1	801.7
10°	825.3	816.1	809.6	803.7	799.1	799.1
12.5°	831.2	814.8	805.0	797.1	791.9	791.9
15°	832.5	807.6	793.2	784.7	779.4	779.4
17.5°	824.7	793.2	774.8	763.7	757.8	759.1
20°	805.0	766.3	744.6	732.8	726.9	727.6
22.5°	774.2	729.5	704.6	690.8	684.9	684.9
25°	732.2	683.6	656.7	645.6	640.3	640.3
27.5°	684.3	634.4	610.8	602.3	599.0	599.0
30°	630.5	589.1	572.1	566.2	560.9	560.9
32.5°	585.2	555.7	549.8	541.9	528.1	527.5
35°	549.1	545.8	541.3	517.6	498.0	495.3
37.5°	529.4	549.1	520.3	479.6	463.8	463.2
40°	518.9	537.3	487.5	467.8	465.8	465.8
42.5°	494.0	507.1	485.5	474.3	474.3	475.0
45°	467.8	478.9	490.1	480.2	483.5	484.2
47.5°	449.4	471.7	490.1	481.6	488.1	492.0
50°	432.3	465.1	480.2	480.2	487.5	488.1
52.5°	428.4	456.0	471.1	478.3	478.9	475.6
55°	429.1	448.7	463.8	473.0	469.1	469.1
57.5°	428.4	444.8	457.9	461.2	463.2	463.2
60°	429.1	439.6	450.1	448.7	455.3	455.3
62.5°	431.0	432.3	437.6	436.3	446.1	446.1
65°	435.6	423.2	419.9	421.2	433.0	432.3
67.5°	444.2	410.7	400.2	400.9	417.9	415.3
70°	456.6	393.6	377.9	374.0	402.8	398.2
72.5°	460.6	374.0	349.0	345.1	362.1	349.0
75°	442.2	358.2	318.2	305.1	297.9	293.9
77.5°	394.3	348.4	286.0	258.5	247.3	244.7
80°	326.7	328.0	244.1	211.3	245.4	244.7
82.5°	246.7	283.4	195.5	183.0	177.8	148.3
85°	119.4	213.2	150.2	126.0	75.4	71.5
87.5°	10.5	89.2	86.6	56.4	25.6	24.3
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)