

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: P197235

Luminaire Tested: **NAV-AF-03-D-UNV-T2R-8030-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P197235
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-8030-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(3) 80 CRI, 3000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II
ROADWAY OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 10206 lumens
Efficiency: N/A
Efficacy: 106.3 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1.5' x H: 0')
IES Classification: Type II - Short - Semi-Cutoff
BUG Rating: B1 - U0 - G2

Input Watts (W): 96
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

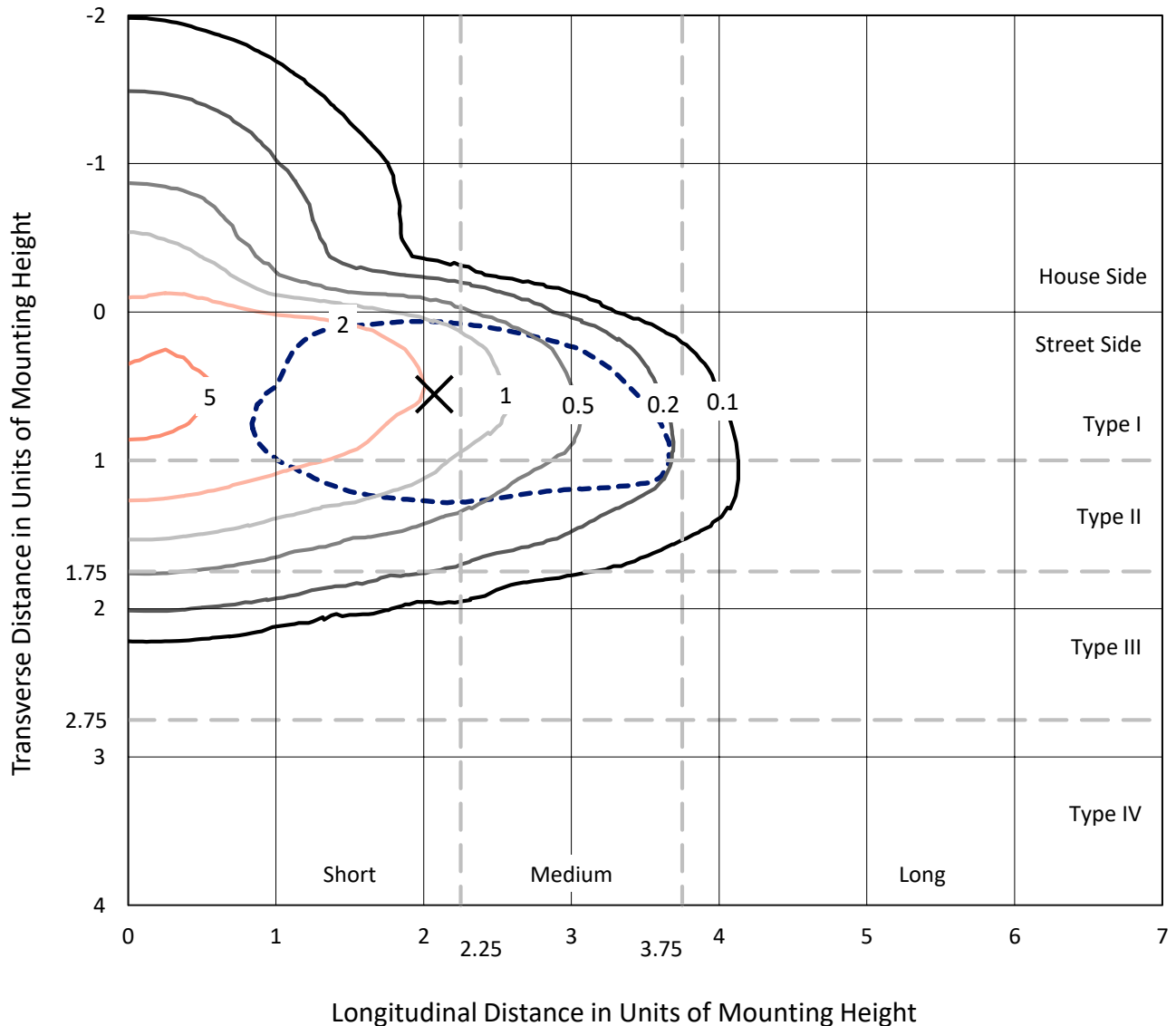


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Iso-Footcandle Lines of Horizontal Illumination

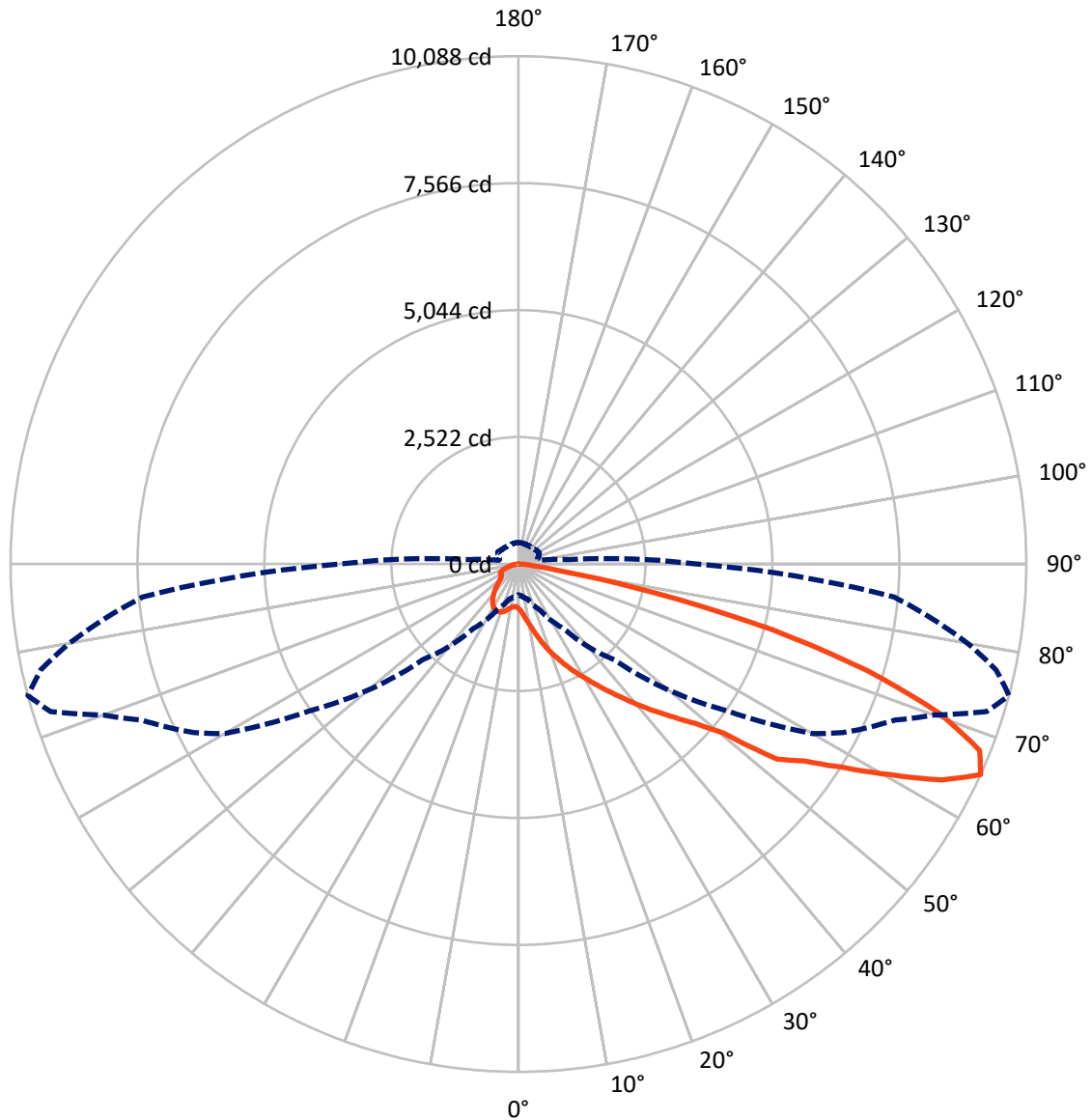
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 6.3 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	1533.6	0.0	1533.6
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	8672.4	0.0	8672.4
	% Fixture	85.0	0.0	85.0
Total	Lumens	10206.0	0.0	10206.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	104.4	1.0
10°-20°	398.7	3.9
20°-30°	804.7	7.9
30°-40°	1366.6	13.4
40°-50°	1906.1	18.7
50°-60°	2336.1	22.9
60°-70°	2198.0	21.5
70°-80°	963.8	9.4
80°-90°	127.5	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°	10206.0	100.0
0°-180°	10206.0	100.0

Coefficient of Utilization



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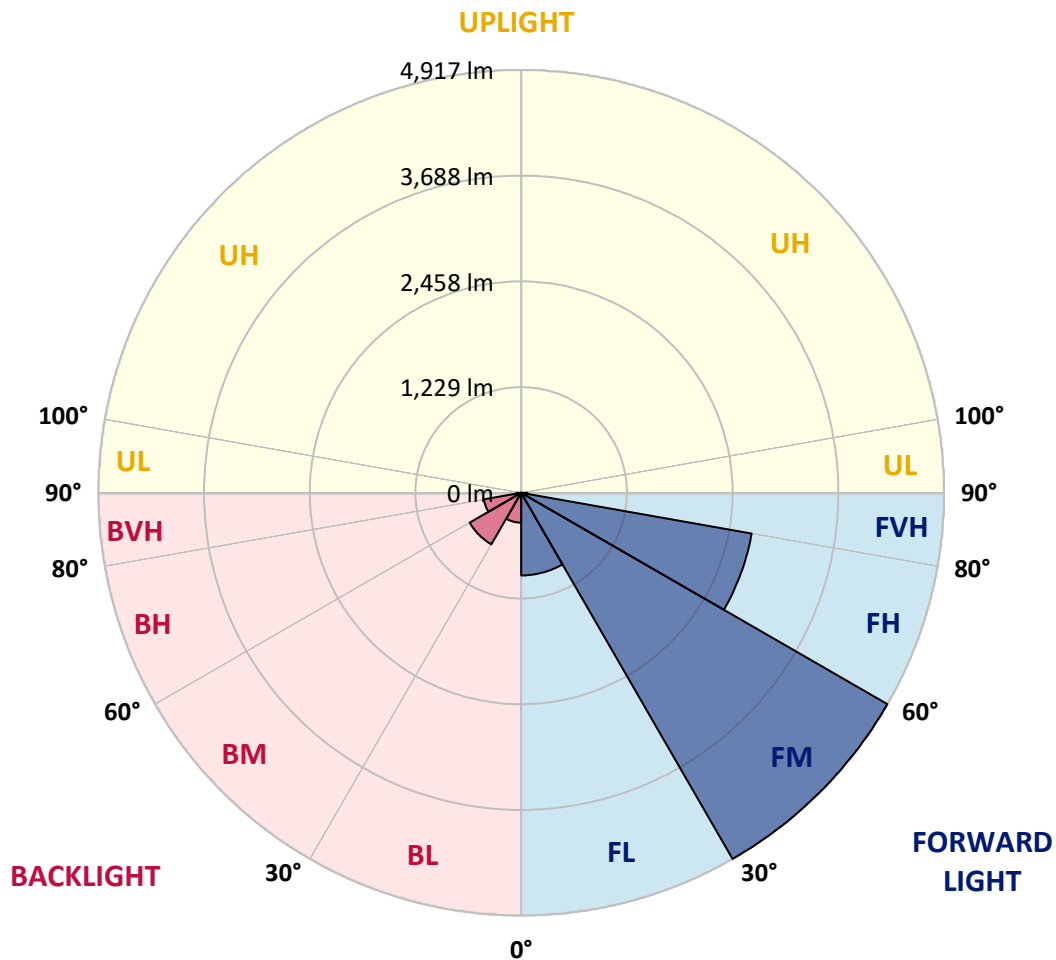
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	960.7	9.4			
FM	(30°-60°)	4916.8	48.2			
FH	(60°-80°)	2721.0	26.7			G2/5000
FVH	(80°-90°)	73.9	0.7			G1/100
BL	(0°-30°)	347.2	3.4	B1/500		
BM	(30°-60°)	692.1	6.8	B1/1000		
BH	(60°-80°)	440.8	4.3	B1/500		G1/500
BVH	(80°-90°)	53.6	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°	884.3	884.3	884.3	884.3	884.3	884.3	884.3	884.3	884.3	884.3	884.3
2.5°	1113.5	1100.5	1101.8	1083.6	1057.0	1027.8	1003.8	990.8	979.7	976.5	958.3
5°	1456.3	1440.1	1434.2	1392.7	1330.3	1256.3	1182.9	1154.4	1131.0	1116.7	1081.7
7.5°	1736.8	1728.3	1720.5	1682.2	1620.5	1525.8	1407.6	1365.4	1326.4	1283.6	1241.4
10°	1927.6	1924.4	1921.2	1894.5	1843.2	1760.8	1633.5	1587.4	1538.7	1484.2	1429.0
12.5°	2071.8	2071.8	2074.4	2052.3	2021.1	1957.5	1841.9	1799.1	1749.7	1692.6	1629.6
15°	2168.5	2171.1	2184.7	2191.2	2175.0	2134.1	2032.8	1995.2	1948.4	1891.9	1829.6
17.5°	2232.8	2238.0	2258.1	2279.5	2300.3	2286.0	2210.7	2175.7	2133.5	2081.5	2023.1
20°	2382.1	2375.6	2376.3	2369.8	2400.3	2411.3	2369.8	2340.6	2306.8	2259.4	2206.2
22.5°	2695.7	2683.4	2651.6	2570.4	2533.4	2529.5	2504.8	2489.2	2463.3	2433.4	2380.2
25°	3104.7	3090.5	3027.5	2893.7	2783.4	2681.4	2636.0	2626.2	2609.4	2589.2	2550.9
27.5°	3527.4	3511.8	3430.7	3261.9	3117.7	2911.9	2770.4	2757.4	2741.8	2733.4	2715.2
30°	3899.4	3882.6	3802.7	3631.3	3457.3	3211.9	2951.5	2906.1	2879.5	2882.0	2871.7
32.5°	4226.0	4211.1	4121.5	3946.8	3770.2	3532.0	3186.6	3115.8	3056.1	3034.0	3041.8
35°	4500.0	4486.4	4388.3	4212.4	4034.5	3836.5	3489.1	3382.6	3285.2	3224.2	3217.1
37.5°	4661.0	4653.2	4584.4	4435.1	4258.5	4113.0	3828.0	3709.9	3566.4	3477.4	3438.5
40°	4651.9	4660.4	4648.7	4581.2	4444.2	4338.3	4181.2	4064.3	3924.1	3791.7	3712.4
42.5°	4519.5	4531.2	4583.8	4618.8	4581.8	4517.5	4489.6	4402.6	4276.7	4136.4	4026.7
45°	4337.7	4348.1	4416.2	4542.8	4648.7	4666.9	4759.7	4716.2	4609.7	4490.3	4369.5
47.5°	4059.2	4079.3	4158.5	4359.8	4611.7	4787.0	4986.3	5006.4	4944.7	4846.1	4733.1
50°	3656.0	3682.6	3793.6	4079.9	4471.4	4910.3	5323.3	5399.9	5375.2	5275.2	5160.9
52.5°	3243.0	3269.7	3417.7	3722.2	4245.5	4961.0	5655.0	5851.1	5992.6	6095.9	6116.0
55°	2813.2	2843.1	3005.4	3356.0	3944.2	4896.7	5892.0	6114.7	6258.2	6366.0	6409.5
57.5°	2328.2	2362.0	2519.1	2873.6	3518.3	4638.3	6155.6	6471.1	6684.7	6851.0	6944.4
60°	1771.8	1814.0	1977.0	2334.1	2958.7	4143.6	6273.1	6739.9	7079.5	7328.8	7476.8
62.5°	1123.2	1166.1	1335.5	1706.2	2321.7	3467.7	5940.7	6621.8	7200.9	7569.7	7841.1
65°	612.9	631.7	725.9	1005.0	1565.4	2690.5	5098.0	5901.1	6735.4	7258.0	7674.9
67.5°	459.7	462.3	472.0	540.2	833.6	1816.6	3985.8	4721.4	5647.9	6320.5	6818.5
70°	402.5	402.5	403.8	404.5	452.5	984.3	2700.3	3377.4	4226.7	4907.1	5525.8
72.5°	361.0	357.1	355.8	348.0	354.5	504.5	1469.9	2078.3	2794.4	3557.9	4135.1
75°	311.6	311.0	311.0	303.2	307.1	355.1	637.6	997.3	1552.4	2263.3	2831.4
77.5°	269.4	264.9	265.5	261.0	273.3	272.0	302.6	411.0	675.9	1188.8	1660.1
80°	222.0	218.8	220.7	218.2	237.6	201.3	203.9	251.3	335.7	521.4	735.0
82.5°	164.3	165.6	177.9	176.6	200.0	135.7	149.3	187.6	225.9	259.7	282.4
85°	96.1	98.0	127.9	134.4	146.7	71.4	91.5	111.7	126.0	139.6	145.4
87.5°	10.4	13.6	71.4	73.4	65.6	21.4	37.0	46.7	50.0	53.2	46.7
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°	884.3	884.3	884.3	884.3	884.3	884.3	884.3	884.3	884.3	884.3	884.3
2.5°	952.5	944.0	934.9	929.7	920.6	912.9	898.6	886.9	873.9	864.8	860.9
5°	1064.1	1044.0	1022.6	1007.0	987.5	970.6	938.2	899.2	886.9	860.9	854.4
7.5°	1209.6	1173.2	1136.8	1107.0	1073.2	1045.3	990.8	920.6	911.6	870.0	860.9
10°	1380.3	1327.1	1273.2	1227.1	1177.8	1134.9	1054.4	955.7	946.0	892.7	883.6
12.5°	1571.2	1506.3	1436.8	1368.0	1309.6	1249.2	1139.4	1010.2	994.7	931.7	919.3
15°	1767.9	1697.8	1617.3	1534.2	1462.1	1382.3	1244.0	1081.7	1053.1	979.1	962.2
17.5°	1962.1	1886.1	1801.7	1708.8	1624.4	1529.0	1356.9	1161.5	1112.2	1025.8	1004.4
20°	2149.7	2072.4	1983.5	1892.6	1787.4	1678.3	1472.5	1240.1	1164.8	1064.8	1036.9
22.5°	2320.4	2254.2	2165.3	2060.7	1954.3	1831.6	1590.0	1318.6	1210.9	1094.6	1058.9
25°	2500.3	2439.9	2351.6	2251.0	2127.0	1990.6	1711.4	1393.3	1247.9	1110.9	1066.7
27.5°	2682.1	2630.1	2547.0	2441.2	2308.1	2156.8	1834.8	1462.1	1277.7	1116.1	1062.8
30°	2876.2	2836.0	2759.3	2641.2	2506.8	2339.3	1969.2	1529.6	1296.6	1108.9	1045.3
32.5°	3059.9	3058.6	2990.5	2867.8	2723.0	2538.6	2110.7	1597.8	1306.3	1088.8	1014.8
35°	3250.8	3277.4	3226.2	3109.3	2956.7	2752.2	2267.2	1670.5	1307.0	1053.1	975.2
37.5°	3467.7	3515.1	3492.4	3381.3	3221.0	2995.7	2450.9	1752.3	1303.1	1003.8	917.4
40°	3714.4	3779.3	3778.7	3685.2	3513.8	3268.4	2664.5	1843.9	1294.0	942.1	849.2
42.5°	3996.8	4074.1	4095.5	4003.3	3830.0	3566.4	2909.3	1944.5	1279.7	881.0	777.2
45°	4320.2	4388.3	4428.6	4342.9	4168.9	3891.0	3190.4	2058.8	1262.2	802.5	694.7
47.5°	4666.2	4745.4	4805.8	4732.4	4546.7	4261.1	3523.5	2206.2	1255.7	712.9	605.8
50°	5095.4	5177.2	5307.7	5274.6	5172.6	4942.8	4228.0	2554.2	1258.3	627.8	531.1
52.5°	6160.1	6347.8	6512.7	6439.3	6197.2	5803.1	4800.6	2747.7	1203.7	558.4	479.2
55°	6481.5	6694.5	6938.0	6907.4	6675.0	6277.7	5253.1	2909.3	1151.1	507.7	445.4
57.5°	7043.8	7295.0	7635.3	7628.8	7343.7	6896.4	5835.5	3102.8	1128.4	478.5	428.5
60°	7639.2	7959.2	8429.3	8502.7	8193.0	7727.5	6523.7	3340.4	1131.7	462.3	418.8
62.5°	8074.2	8543.6	9227.2	9446.7	9081.8	8568.9	7237.9	3578.1	1112.2	443.4	407.1
65°	8100.8	8776.7	9746.6	10088.1	9718.7	9059.7	7489.8	3531.3	995.3	418.1	388.3
67.5°	7451.5	8331.9	9510.3	9884.9	9507.1	8757.2	7048.3	3087.2	809.0	374.0	355.8
70°	6206.2	7228.2	8451.4	8868.8	8556.6	7797.6	6134.2	2465.9	604.5	315.5	307.1
72.5°	4796.1	5749.2	6860.0	7246.4	7007.4	6340.0	4838.3	1797.1	431.8	255.8	249.3
75°	3428.7	4240.3	5046.7	5194.1	4958.4	4345.5	3139.2	1122.6	302.6	209.7	200.6
77.5°	2123.1	2650.9	2940.5	2750.9	2450.3	2036.7	1277.7	554.5	201.3	170.8	161.7
80°	942.1	1105.7	1032.3	920.0	726.5	597.3	390.2	246.1	129.9	131.8	126.6
82.5°	316.8	335.0	325.9	324.0	292.2	255.8	165.6	106.5	72.7	84.4	82.5
85°	154.5	161.7	162.3	168.2	146.1	113.6	44.8	42.2	31.2	45.4	47.4
87.5°	46.7	47.4	42.9	46.7	37.7	26.0	8.4	11.7	5.8	11.0	11.0
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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CANDELA DISTRIBUTION (continued):

	105°	107.5°	110°	112.5°	115°	117.5°	120°	122.5°	125°	127.5°	130°
0°	884.3	884.3	884.3	884.3	884.3	884.3	884.3	884.3	884.3	884.3	884.3
2.5°	853.8	851.2	846.6	841.4	840.1	833.6	831.7	828.5	826.5	823.3	820.7
5°	846.0	841.4	836.2	830.4	830.4	821.3	817.4	813.5	813.5	807.7	805.1
7.5°	853.8	847.9	842.1	836.9	838.8	828.5	824.6	820.7	820.0	814.2	811.6
10°	875.8	870.0	862.9	857.7	855.7	847.3	842.7	836.9	833.0	829.1	825.2
12.5°	909.6	901.8	892.7	881.7	877.1	870.0	862.9	855.1	846.0	842.1	836.2
15°	949.9	936.9	924.5	910.9	898.6	891.4	881.7	869.4	857.0	851.8	844.0
17.5°	983.0	969.3	951.8	935.6	913.5	907.7	894.0	879.1	859.0	857.0	845.3
20°	1010.9	990.1	968.7	949.2	915.5	912.2	895.3	877.8	849.2	849.2	834.9
22.5°	1026.5	997.9	972.6	946.6	904.4	901.8	882.3	861.6	826.5	827.8	810.3
25°	1029.1	994.7	962.8	931.7	883.0	878.4	853.8	831.0	792.7	790.1	772.0
27.5°	1018.7	978.4	941.4	903.8	851.2	841.4	814.2	786.9	749.2	742.7	723.3
30°	994.7	947.3	905.7	862.2	807.0	791.4	762.9	735.0	696.7	688.2	670.0
32.5°	956.4	902.5	856.4	812.9	751.8	732.4	703.8	675.9	638.9	632.4	615.5
35°	905.7	845.3	796.6	750.5	689.5	669.4	642.1	617.4	583.7	581.1	569.4
37.5°	842.1	779.1	727.2	683.0	625.2	614.8	586.9	568.7	540.8	543.4	537.6
40°	770.0	705.7	656.4	617.4	567.5	558.4	541.5	527.8	503.8	511.0	511.6
42.5°	697.3	633.0	588.2	553.2	510.3	504.5	492.8	485.0	466.8	481.1	486.9
45°	614.8	555.1	516.8	490.2	458.4	458.4	452.5	451.9	439.5	459.7	465.5
47.5°	535.0	488.2	461.6	445.4	423.3	433.7	431.8	436.9	427.9	448.6	453.8
50°	474.6	442.1	425.9	418.1	402.5	418.8	422.7	429.8	422.0	440.2	444.1
52.5°	436.3	414.9	405.8	403.8	392.8	412.9	419.4	425.9	416.8	433.7	433.1
55°	414.9	400.6	397.3	401.2	392.8	412.3	418.8	423.3	415.5	427.2	426.6
57.5°	407.1	399.3	401.2	407.1	401.2	417.5	420.7	425.9	418.1	423.3	425.9
60°	406.4	406.4	414.2	422.0	418.1	429.8	431.8	431.1	424.0	424.6	425.9
62.5°	402.5	412.3	425.3	437.6	436.3	450.6	451.9	443.4	437.6	431.1	429.2
65°	390.2	406.4	425.3	442.1	444.7	466.8	469.4	461.0	457.1	446.0	437.6
67.5°	362.9	383.7	405.8	426.6	431.1	461.0	466.8	470.1	472.0	464.9	453.8
70°	316.8	338.3	361.0	385.0	391.5	424.6	436.9	451.9	463.6	474.0	470.1
72.5°	257.8	277.2	296.7	318.8	328.5	362.9	379.2	405.1	423.3	449.9	461.0
75°	204.5	216.2	227.9	241.5	249.3	283.1	303.2	334.4	359.0	396.0	420.7
77.5°	161.0	166.9	172.7	178.5	181.8	200.6	216.9	248.0	276.6	323.3	359.7
80°	124.0	127.3	127.9	129.9	128.6	137.6	143.5	162.3	187.0	233.1	275.9
82.5°	79.9	82.5	83.8	87.0	80.5	92.2	96.1	98.0	111.0	144.8	175.3
85°	44.8	45.4	46.1	47.4	38.3	50.0	50.6	47.4	46.1	59.7	67.5
87.5°	11.0	10.4	11.0	11.0	4.5	10.4	10.4	7.1	5.2	9.7	7.8
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-03-D-UNV-T2R-8030-600

CANDELA DISTRIBUTION (continued):

	135°	145°	155°	165°	175°	180°
0°	884.3	884.3	884.3	884.3	884.3	884.3
2.5°	814.8	813.5	814.2	810.9	809.6	810.3
5°	801.8	799.2	799.2	797.3	794.7	794.7
7.5°	807.7	802.5	800.5	796.6	792.7	793.4
10°	816.8	807.7	801.2	795.3	790.8	790.8
12.5°	822.6	806.4	796.6	788.8	783.7	783.7
15°	823.9	799.2	785.0	776.5	771.3	771.3
17.5°	816.1	785.0	766.8	755.7	749.9	751.2
20°	796.6	758.3	736.9	725.2	719.4	720.0
22.5°	766.1	722.0	697.3	683.7	677.8	677.8
25°	724.6	676.5	649.9	638.9	633.7	633.7
27.5°	677.2	627.8	604.5	596.0	592.8	592.8
30°	623.9	583.0	566.2	560.3	555.1	555.1
32.5°	579.1	549.9	544.1	536.3	522.7	522.0
35°	543.4	540.2	535.6	512.3	492.8	490.2
37.5°	524.0	543.4	514.9	474.6	459.0	458.4
40°	513.6	531.7	482.4	462.9	461.0	461.0
42.5°	488.9	501.9	480.4	469.4	469.4	470.1
45°	462.9	474.0	485.0	475.3	478.5	479.2
47.5°	444.7	466.8	485.0	476.6	483.0	486.9
50°	427.9	460.3	475.3	475.3	482.4	483.0
52.5°	424.0	451.2	466.2	473.3	474.0	470.7
55°	424.6	444.1	459.0	468.1	464.2	464.2
57.5°	424.0	440.2	453.2	456.4	458.4	458.4
60°	424.6	435.0	445.4	444.1	450.6	450.6
62.5°	426.6	427.9	433.1	431.8	441.5	441.5
65°	431.1	418.8	415.5	416.8	428.5	427.9
67.5°	439.5	406.4	396.0	396.7	413.6	411.0
70°	451.9	389.6	374.0	370.1	398.6	394.1
72.5°	455.8	370.1	345.4	341.5	358.4	345.4
75°	437.6	354.5	314.9	301.9	294.8	290.9
77.5°	390.2	344.8	283.1	255.8	244.8	242.2
80°	323.3	324.6	241.5	209.1	242.8	242.2
82.5°	244.1	280.5	193.5	181.1	175.9	146.7
85°	118.2	211.0	148.7	124.7	74.7	70.8
87.5°	10.4	88.3	85.7	55.8	25.3	24.0
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)