

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: P196218

Luminaire Tested: **NAV-AF-06-D-UNV-SLL**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196218
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24264)
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-SLL
Description: NAVION ROADWAY AND AREA LUMINAIRE
(6) 70 CRI, 4000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND SPILL LIGHT
ELIMINATOR LEFT OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 32545.2 lumens
Efficiency: N/A
Efficacy: 97.7 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B3 - U0 - G5

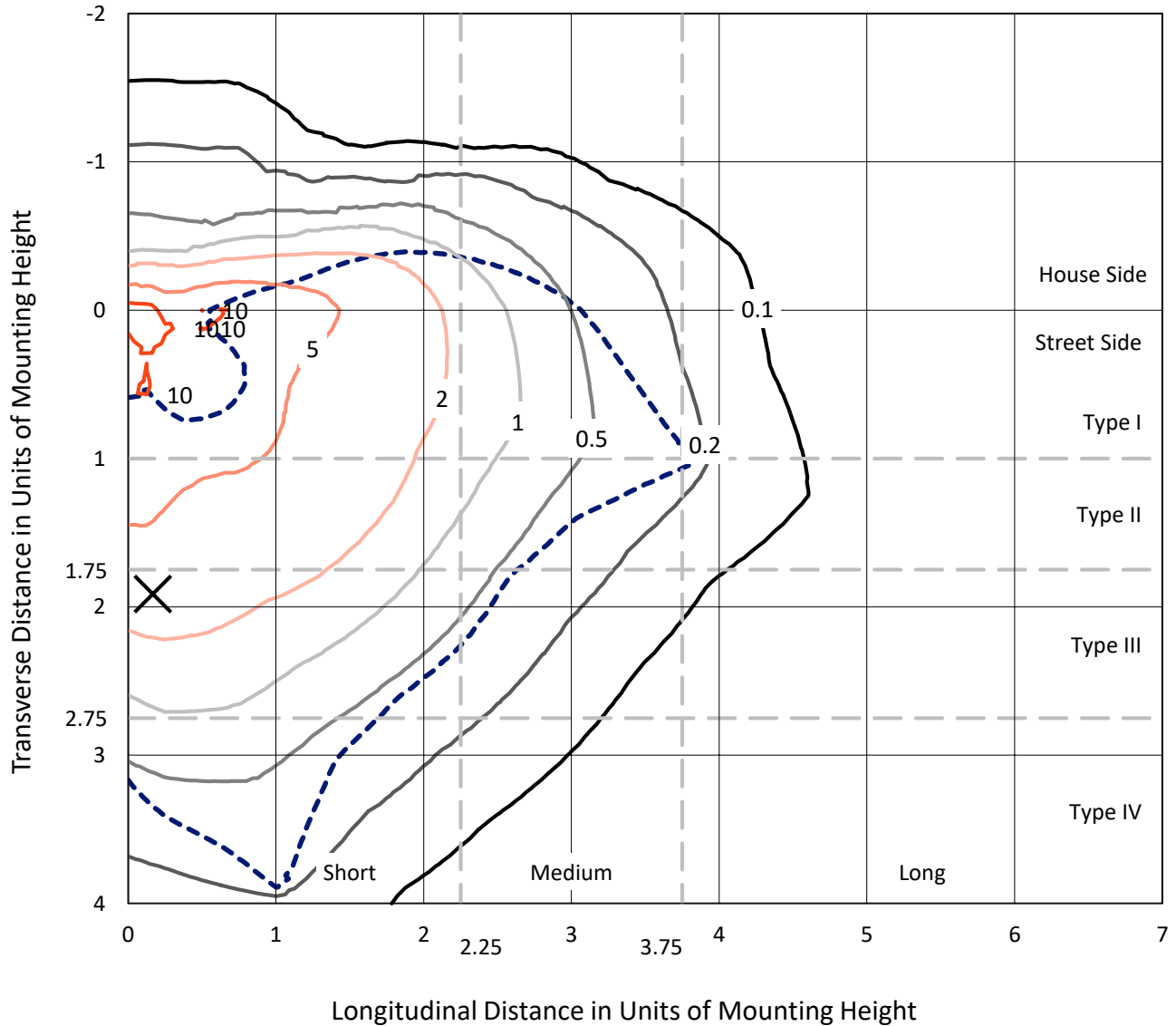
Input Watts (W): 333
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

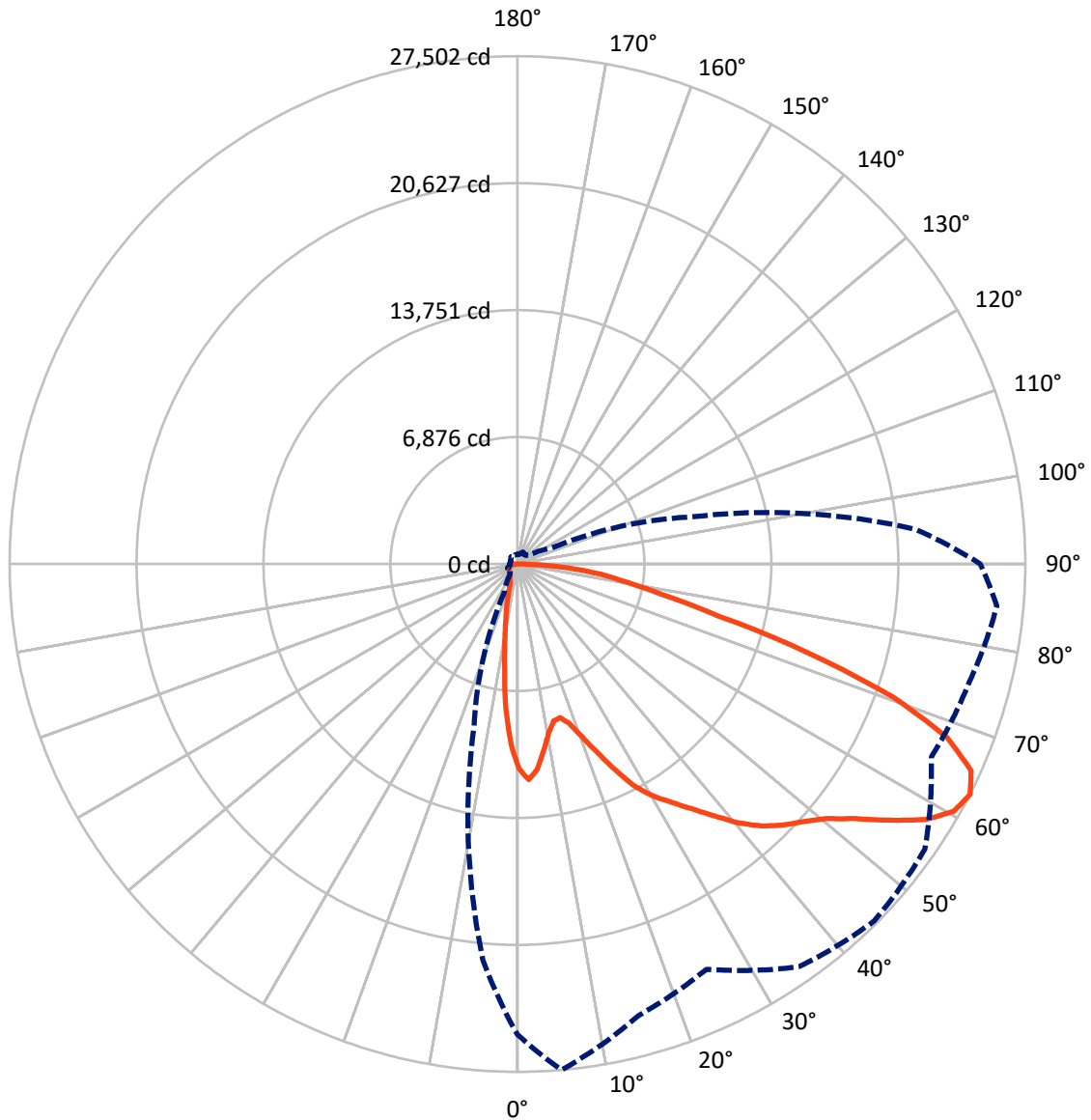
× Max cd
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 14.2 fc
 Type IV - Short - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 5-Deg Lateral - - - Horizontal Cone Through 62.5-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	5765.4	0.0	5765.4
	% Fixture	17.7	0.0	17.7
Street Side	Lumens	26779.7	0.0	26779.7
	% Fixture	82.3	0.0	82.3
Total	Lumens	32545.2	0.0	32545.2
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	806.9	2.5
10°-20°	1473.8	4.5
20°-30°	2119.7	6.5
30°-40°	3246.6	10.0
40°-50°	4746.6	14.6
50°-60°	6906.3	21.2
60°-70°	8001.9	24.6
70°-80°	4171.3	12.8
80°-90°	1072.2	3.3
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°	32545.2	100.0
0°-180°	32545.2	100.0



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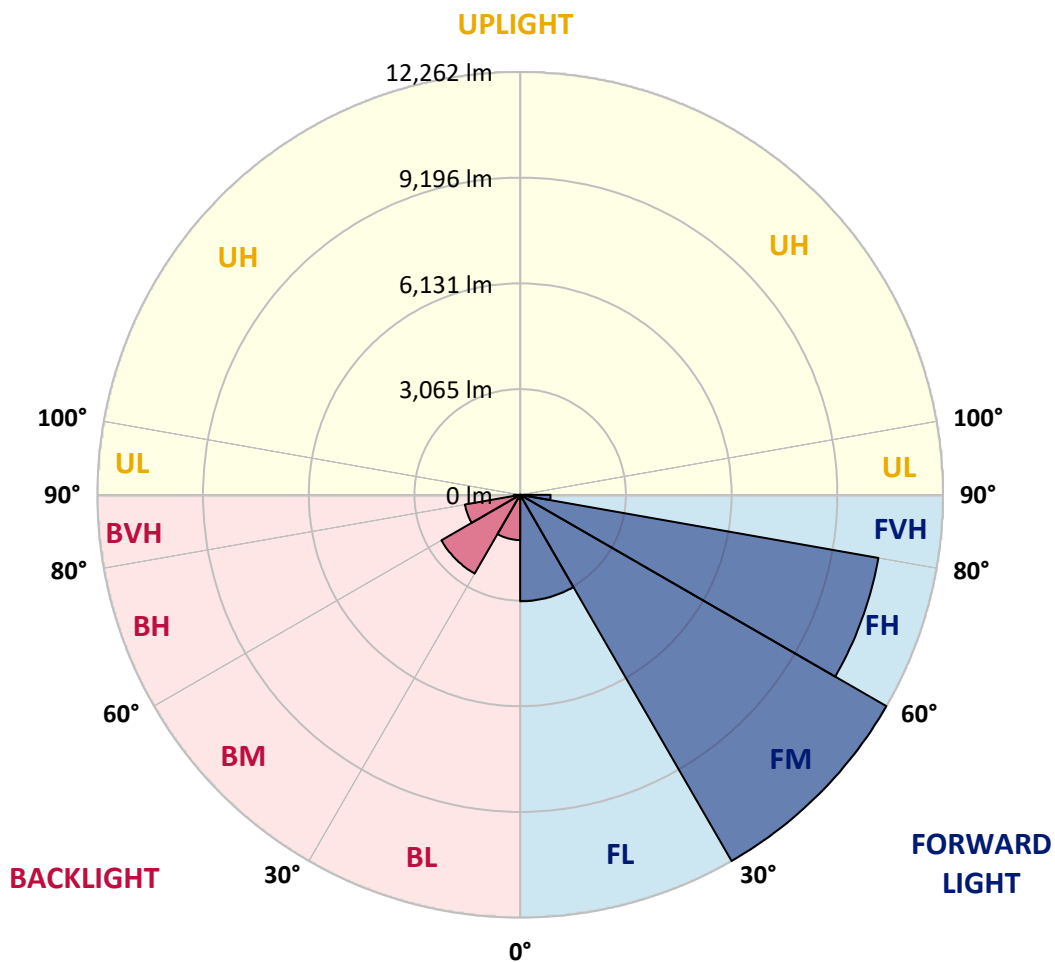
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	3088.7	9.5			
FM	(30°-60°)	12261.5	37.7			
FH	(60°-80°)	10547.4	32.4			G4/12000
FVH	(80°-90°)	882.1	2.7			G5
BL	(0°-30°)	1311.7	4.0	B3/2500		
BM	(30°-60°)	2637.9	8.1	B3/5000		
BH	(60°-80°)	1625.7	5.0	B3/2500		G3/2500
BVH	(80°-90°)	190.1	0.6			G2/225
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B3-U0-G5

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	11095.3	11095.3	11095.3	11095.3	11095.3	11095.3	11095.3	11095.3	11095.3	11095.3	11095.3
2.5°	11454.0	11697.0	11975.5	12338.8	12586.6	12685.7	12768.4	12629.1	12494.6	12242.2	12152.5
5°	10698.8	11166.1	11933.0	12662.2	13304.0	13672.0	13785.4	13528.1	13070.3	12409.6	12060.4
7.5°	9578.0	10193.9	11272.3	12345.9	13266.2	13879.7	13924.6	13414.9	12513.5	11430.4	10864.0
10°	8598.7	9294.8	10543.1	11744.2	12718.8	13346.4	13223.8	12508.7	11420.9	10189.2	9549.7
12.5°	8030.1	8726.2	9998.0	11218.0	12135.9	12374.2	12124.1	11522.4	10491.2	9257.1	8612.9
15°	7909.7	8627.1	9804.6	10833.4	11402.0	11248.7	11000.9	10696.5	9962.6	8952.7	8329.7
17.5°	8273.1	9075.4	10061.7	10625.7	10602.2	10234.0	10026.4	10085.4	9960.3	9283.1	8631.8
20°	9021.1	9969.7	10715.4	10569.1	9965.0	9448.3	9327.9	9790.4	10368.5	10111.3	9396.3
22.5°	10005.1	11085.8	11607.3	10731.9	9632.3	9075.4	9051.8	9773.9	11111.8	11364.3	10493.5
25°	11116.5	12376.6	12506.4	11019.8	9596.9	9042.4	9021.1	10028.7	12006.2	12605.5	11723.0
27.5°	12475.7	13679.2	13256.8	11404.5	9752.6	9139.1	9153.3	10462.9	12938.2	13832.5	13108.1
30°	13499.9	14604.2	13719.3	11781.9	10002.7	9309.1	9344.5	10932.5	13440.9	14684.4	14214.8
32.5°	14457.9	15394.7	14163.0	12154.8	10368.5	9561.5	9684.2	11517.7	14044.9	15415.9	15260.2
35°	15517.3	16279.5	14656.1	12553.6	10892.4	10005.1	10182.1	12074.6	14644.3	16147.4	16296.1
37.5°	16718.5	17291.9	15191.7	13117.6	11647.4	10826.3	10925.4	12643.3	15061.9	16956.7	17407.5
40°	17969.1	18426.9	15777.0	13870.3	12744.7	11935.4	11982.5	13372.4	15390.0	17794.4	18485.8
42.5°	19042.7	19399.0	16364.6	14804.8	14004.8	13065.6	13105.7	14158.2	15703.8	18516.5	19349.5
45°	19901.7	20163.6	16919.0	15788.7	15349.8	14476.7	14467.3	14958.1	16123.9	19125.4	20012.6
47.5°	20701.7	20840.9	17537.3	16746.7	16744.4	16293.8	15956.3	15902.0	16683.1	19637.4	20590.8
50°	21617.2	21669.1	18353.7	17714.2	18448.1	18377.3	17754.3	17100.8	17407.5	20213.2	21197.2
52.5°	22891.4	22893.7	19366.0	18658.1	20328.8	20552.9	19828.6	18457.5	18478.8	21334.0	22244.9
55°	24389.8	24493.6	20685.1	19788.5	22296.7	22679.0	21997.1	20069.3	20017.3	23141.6	23943.9
57.5°	25548.4	26098.2	22221.3	21201.9	24135.0	24632.9	24083.1	21739.9	21907.4	25005.7	25345.6
60°	25874.1	27160.2	23752.7	22787.6	25690.1	26438.1	25878.8	23545.1	23757.4	26216.3	25749.0
62.5°	25484.8	27502.2	25312.5	24208.1	26612.7	27330.0	26928.9	24727.3	25265.2	26060.5	25067.1
65°	24330.9	27006.7	26667.0	24812.2	26081.8	26336.6	26230.4	24788.7	26084.1	24588.1	23181.7
67.5°	21636.0	25095.4	26062.8	23521.4	23601.7	23328.0	23188.8	23103.8	25163.8	22211.8	20208.5
70°	17596.3	21562.9	23181.7	19684.6	19090.0	18825.7	18367.9	19500.5	22617.7	18924.8	16631.1
72.5°	13554.1	16496.6	19014.4	14922.7	13686.3	13775.9	13256.8	14910.9	18736.0	14630.1	12697.6
75°	9625.3	11248.7	15177.6	10722.5	9084.8	9080.1	9040.0	10731.9	14783.5	10500.7	9290.1
77.5°	6937.6	8098.5	11890.5	7175.8	6446.7	6529.3	6397.1	7293.8	11524.8	7553.4	6883.2
80°	5533.4	5996.0	7685.5	4785.5	4799.6	4993.1	4964.8	4988.4	7581.7	5469.8	5146.5
82.5°	3976.1	4551.8	5875.6	3667.0	3173.8	3379.1	3419.2	3700.0	5349.4	3867.6	3393.2
85°	2038.7	2775.0	5406.1	3176.2	1984.5	1644.7	1892.5	2919.0	4646.2	2317.2	1654.1
87.5°	396.4	769.3	3961.9	1765.1	892.0	450.7	743.3	1236.4	2701.8	420.0	205.3
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):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°	185°
0°	11095.3	11095.3	11095.3	11095.3	11095.3	11095.3	11095.3	11095.3	11095.3	11095.3	11095.3
2.5°	11999.1	11697.0	11413.9	11121.2	10894.7	10618.6	10347.2	10111.3	9882.4	9731.4	9778.6
5°	11706.4	10970.2	10309.5	9696.0	9337.3	8905.5	8520.9	8197.6	7947.5	7787.0	7883.8
7.5°	10373.2	9377.4	8506.8	7697.3	7187.7	6628.4	6180.1	5863.9	5670.3	5561.8	5719.9
10°	9009.3	7890.8	6913.9	6071.5	5568.8	5094.6	4688.7	4353.7	4094.1	3971.4	4035.1
12.5°	8032.4	6788.8	5764.7	5198.4	4766.5	4341.8	3921.8	3530.1	3199.8	3048.7	3018.0
15°	7666.7	6196.5	5151.2	4518.8	4089.3	3626.9	3173.8	2753.8	2439.9	2310.1	2281.8
17.5°	7827.1	6069.2	4787.8	4039.8	3416.9	2855.3	2345.5	1949.1	1717.8	1644.7	1651.8
20°	8391.1	6116.3	4495.3	3546.7	2777.4	2111.9	1602.2	1328.5	1229.4	1212.9	1231.7
22.5°	9165.0	6309.9	4282.9	3121.8	2213.4	1536.2	1191.6	1061.8	1035.9	1033.6	1052.4
25°	10186.9	6687.3	4141.3	2744.4	1748.5	1217.6	1038.3	965.2	943.9	948.6	967.5
27.5°	11390.3	7166.4	4049.2	2418.7	1437.0	1085.5	969.9	906.1	884.9	889.6	903.8
30°	12489.9	7586.4	3912.4	2173.3	1290.8	1038.3	932.1	868.4	840.0	840.0	849.5
32.5°	13473.9	7949.9	3751.9	1989.2	1156.2	932.1	844.8	795.2	774.0	781.0	785.7
35°	14347.0	8140.9	3626.9	1880.7	1047.7	859.0	771.6	719.7	691.4	696.1	703.2
37.5°	15205.9	8214.1	3544.2	1821.7	969.9	814.1	733.9	691.4	660.7	656.0	653.7
40°	16022.4	8197.6	3466.4	1805.2	917.9	781.0	710.2	672.5	641.8	634.7	632.4
42.5°	16727.9	8143.3	3393.2	1760.3	882.5	757.5	691.4	658.4	627.7	618.3	613.6
45°	17372.1	8110.3	3313.0	1677.7	901.4	748.0	682.0	646.6	618.3	606.4	601.7
47.5°	18087.1	8228.3	3223.3	1588.0	896.7	750.3	682.0	641.8	613.6	601.7	597.0
50°	18938.9	8627.1	3112.4	1465.4	854.2	802.3	679.5	634.7	608.8	601.7	592.3
52.5°	20142.4	9273.7	2959.1	1307.2	821.2	856.6	677.2	623.0	601.7	589.9	578.2
55°	21791.8	9920.2	2760.8	1139.8	769.3	818.8	682.0	608.8	585.2	573.4	559.2
57.5°	23144.0	10411.0	2510.7	1000.5	722.1	774.0	674.8	592.3	566.3	554.5	542.8
60°	23056.6	10458.1	2272.4	910.8	693.8	696.1	691.4	580.5	549.8	540.3	530.9
62.5°	21629.0	9875.4	2050.6	866.0	672.5	634.7	705.5	566.3	533.3	523.9	516.8
65°	19252.8	8518.5	1932.6	866.0	653.7	601.7	615.9	547.5	516.8	507.4	502.6
67.5°	16239.4	6845.5	1821.7	884.9	627.7	578.2	559.2	528.6	500.2	490.8	486.1
70°	13016.1	5387.2	1743.8	875.4	604.1	552.2	528.6	502.6	474.3	472.0	467.2
72.5°	10210.4	4327.7	1708.4	875.4	568.7	521.5	497.9	479.0	450.7	448.4	441.3
75°	8181.0	3249.3	1562.1	859.0	533.3	481.4	460.1	443.7	415.3	417.7	413.0
77.5°	6335.7	2298.4	1304.9	774.0	488.5	436.5	420.0	408.3	375.2	377.6	377.6
80°	4955.4	1496.1	1012.3	641.8	436.5	384.6	372.9	363.4	328.0	332.8	332.8
82.5°	3395.6	889.6	733.9	516.8	375.2	328.0	325.6	311.5	273.7	276.1	280.8
85°	1854.7	585.2	488.5	382.3	294.9	266.7	261.9	254.8	219.4	219.4	221.8
87.5°	342.2	313.8	287.9	252.5	198.2	191.1	184.0	191.1	165.2	160.5	160.5
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):

	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°	285°
0°	11095.3	11095.3	11095.3	11095.3	11095.3	11095.3	11095.3	11095.3	11095.3	11095.3	11095.3
2.5°	9667.7	9504.8	9391.6	9292.5	9054.1	9070.7	9103.8	9150.9	9002.3	9080.1	9176.9
5°	7787.0	7652.5	7551.0	7393.0	7060.2	6942.3	6866.8	6833.7	6611.8	6659.1	6762.9
7.5°	5741.1	5738.8	5703.4	5526.4	5125.3	4882.2	4721.7	4672.2	4535.4	4587.2	4745.4
10°	4042.2	4084.6	4068.1	3910.0	3551.4	3376.8	3341.4	3440.5	3442.8	3544.2	3815.6
12.5°	2921.3	2897.7	2876.4	2746.7	2477.7	2449.4	2529.6	2666.4	2699.5	2808.0	3091.3
15°	2180.3	2123.7	2111.9	2010.5	1833.4	1859.4	1918.4	1989.2	1991.6	2067.1	2300.7
17.5°	1635.3	1635.3	1654.1	1588.0	1460.7	1448.8	1418.2	1399.3	1371.0	1401.6	1529.1
20°	1269.5	1328.5	1375.7	1337.9	1222.3	1165.7	1106.7	1069.0	1047.7	1050.1	1087.8
22.5°	1087.8	1135.0	1196.3	1177.5	1080.7	1007.6	969.9	943.9	927.4	927.4	948.6
25°	995.8	1026.4	1083.1	1073.7	991.0	932.1	901.4	875.4	856.6	854.2	875.4
27.5°	922.6	941.5	979.3	974.6	889.6	851.8	833.0	816.4	804.7	802.3	823.6
30°	856.6	866.0	884.9	877.8	814.1	776.3	769.3	762.2	755.1	757.5	788.2
32.5°	797.6	804.7	816.4	807.0	745.6	712.6	700.8	691.4	684.4	691.4	726.8
35°	731.5	752.8	766.9	762.2	696.1	656.0	630.0	606.4	597.0	604.1	644.2
37.5°	674.8	710.2	729.2	724.5	656.0	608.8	575.7	571.0	571.0	580.5	620.6
40°	653.7	679.5	696.1	689.1	620.6	573.4	554.5	547.5	549.8	559.2	601.7
42.5°	634.7	658.4	663.1	649.0	580.5	549.8	538.0	528.6	533.3	545.1	587.6
45°	618.3	637.1	634.7	613.6	547.5	526.2	526.2	519.1	521.5	530.9	575.7
47.5°	606.4	615.9	611.1	589.9	523.9	507.4	514.4	514.4	519.1	526.2	571.0
50°	587.6	594.6	589.9	571.0	504.9	490.8	497.9	507.4	512.1	519.1	559.2
52.5°	568.7	573.4	571.0	552.2	486.1	476.7	476.7	486.1	495.5	504.9	540.3
55°	549.8	554.5	556.9	542.8	472.0	462.5	460.1	460.1	469.5	483.8	521.5
57.5°	535.6	535.6	540.3	530.9	457.8	446.0	434.1	436.5	448.4	460.1	497.9
60°	519.1	521.5	528.6	519.1	438.9	420.0	410.6	422.4	427.1	438.9	479.0
62.5°	504.9	504.9	509.7	502.6	422.4	403.6	396.4	408.3	408.3	420.0	460.1
65°	493.2	490.8	490.8	488.5	405.9	387.0	382.3	387.0	389.3	401.1	441.3
67.5°	483.8	472.0	472.0	476.7	389.3	370.5	368.2	368.2	370.5	384.6	420.0
70°	462.5	453.1	450.7	467.2	372.9	349.2	349.2	344.5	349.2	356.3	394.0
72.5°	438.9	431.8	429.4	453.1	356.3	325.6	320.9	318.5	320.9	328.0	363.4
75°	408.3	403.6	408.3	443.7	339.8	299.7	292.6	290.2	290.2	292.6	330.3
77.5°	372.9	368.2	403.6	413.0	330.3	269.0	261.9	257.2	252.5	252.5	294.9
80°	330.3	328.0	389.3	349.2	316.2	236.0	224.1	217.1	212.4	210.0	252.5
82.5°	287.9	283.2	332.8	273.7	261.9	193.5	177.0	162.9	155.7	155.7	193.5
85°	236.0	233.6	261.9	200.6	181.7	141.6	117.9	106.2	96.8	96.8	125.1
87.5°	172.3	167.6	162.9	120.3	92.1	63.7	44.8	42.5	37.7	35.4	51.9
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: P196218

CATALOG NUMBER: NAV-AF-06-D-UNV-SLL

CANDELA DISTRIBUTION (continued):

	295°	305°	315°	325°	335°	345°	355°	360°
0°	11095.3	11095.3	11095.3	11095.3	11095.3	11095.3	11095.3	11095.3
2.5°	9320.8	9516.6	9887.1	10191.6	10597.4	10923.1	11293.5	11454.0
5°	6954.0	7263.2	7829.5	8313.2	8983.3	9604.0	10311.9	10698.8
7.5°	4988.4	5446.2	5875.6	6479.8	7317.5	8150.4	9066.0	9578.0
10°	4127.1	4547.1	4915.3	5344.7	5991.3	6928.0	8020.7	8598.7
12.5°	3419.2	3872.3	4261.6	4721.7	5264.5	6111.6	7357.6	8030.1
15°	2621.6	3114.8	3582.1	4136.5	4801.9	5769.4	7159.3	7909.7
17.5°	1795.7	2324.3	2900.1	3577.3	4379.6	5625.5	7348.1	8273.1
20°	1220.0	1607.0	2232.3	3034.6	3999.7	5557.1	7763.4	9021.1
22.5°	1002.9	1177.5	1647.1	2524.8	3688.2	5632.6	8438.3	10005.1
25°	920.2	1014.7	1281.3	2076.5	3449.9	5833.2	9351.5	11116.5
27.5°	868.4	948.6	1123.2	1755.6	3230.4	6106.9	10462.9	12475.7
30°	837.7	913.2	1059.5	1590.5	3029.9	6342.9	11418.6	13499.9
32.5°	769.3	825.9	946.2	1496.1	2885.9	6534.0	12261.0	14457.9
35°	686.7	755.1	854.2	1434.7	2881.1	6623.7	13053.9	15517.3
37.5°	656.0	722.1	795.2	1401.6	2909.5	6699.2	14023.7	16718.5
40°	637.1	696.1	755.1	1396.9	2933.1	6758.1	14972.3	17969.1
42.5°	620.6	679.5	748.0	1363.9	2923.7	6838.4	15812.4	19042.7
45°	615.9	674.8	764.6	1314.4	2921.3	6963.4	16480.1	19901.7
47.5°	611.1	700.8	759.8	1260.1	2911.8	7227.8	17232.8	20701.7
50°	606.4	748.0	726.8	1184.6	2841.0	7678.5	18245.1	21617.2
52.5°	604.1	755.1	691.4	1080.7	2713.7	8346.3	19727.1	22891.4
55°	594.6	717.4	630.0	943.9	2529.6	9066.0	21315.1	24389.8
57.5°	573.4	639.4	594.6	809.4	2265.3	9568.6	22487.9	25548.4
60°	625.3	549.8	571.0	740.9	1949.1	9658.3	22539.8	25874.1
62.5°	597.0	500.2	547.5	717.4	1727.3	9073.1	21508.7	25484.8
65°	476.7	474.3	526.2	740.9	1694.3	7763.4	19767.2	24330.9
67.5°	434.1	455.4	504.9	769.3	1715.5	6116.3	17204.6	21636.0
70°	405.9	431.8	476.7	795.2	1753.2	4818.5	13851.5	17596.3
72.5°	377.6	398.7	448.4	821.2	1727.3	3801.5	11085.8	13554.1
75°	342.2	361.0	408.3	752.8	1481.8	2793.9	8808.7	9625.3
77.5°	302.1	318.5	358.6	594.6	1113.8	1944.4	6597.7	6937.6
80°	259.5	266.7	297.4	434.1	726.8	1163.3	5021.5	5533.4
82.5°	205.3	207.7	226.5	318.5	453.1	743.3	3482.9	3976.1
85°	132.2	136.9	146.3	224.1	304.4	476.7	1779.2	2038.7
87.5°	44.8	51.9	51.9	108.5	148.6	264.3	545.1	396.4
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)