

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: P196291

Luminaire Tested: **NAV-AF-01-D-UNV-T2R-1200**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196291  
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-1200  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(1) 70 CRI, 4000K, 1200mA LIGHTSQUARE WITH 16 LEDS EACH AND TYPE II ROADWAY OPTICS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7184.2 lumens  
Efficiency: N/A  
Efficacy: 107.2 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 - G2

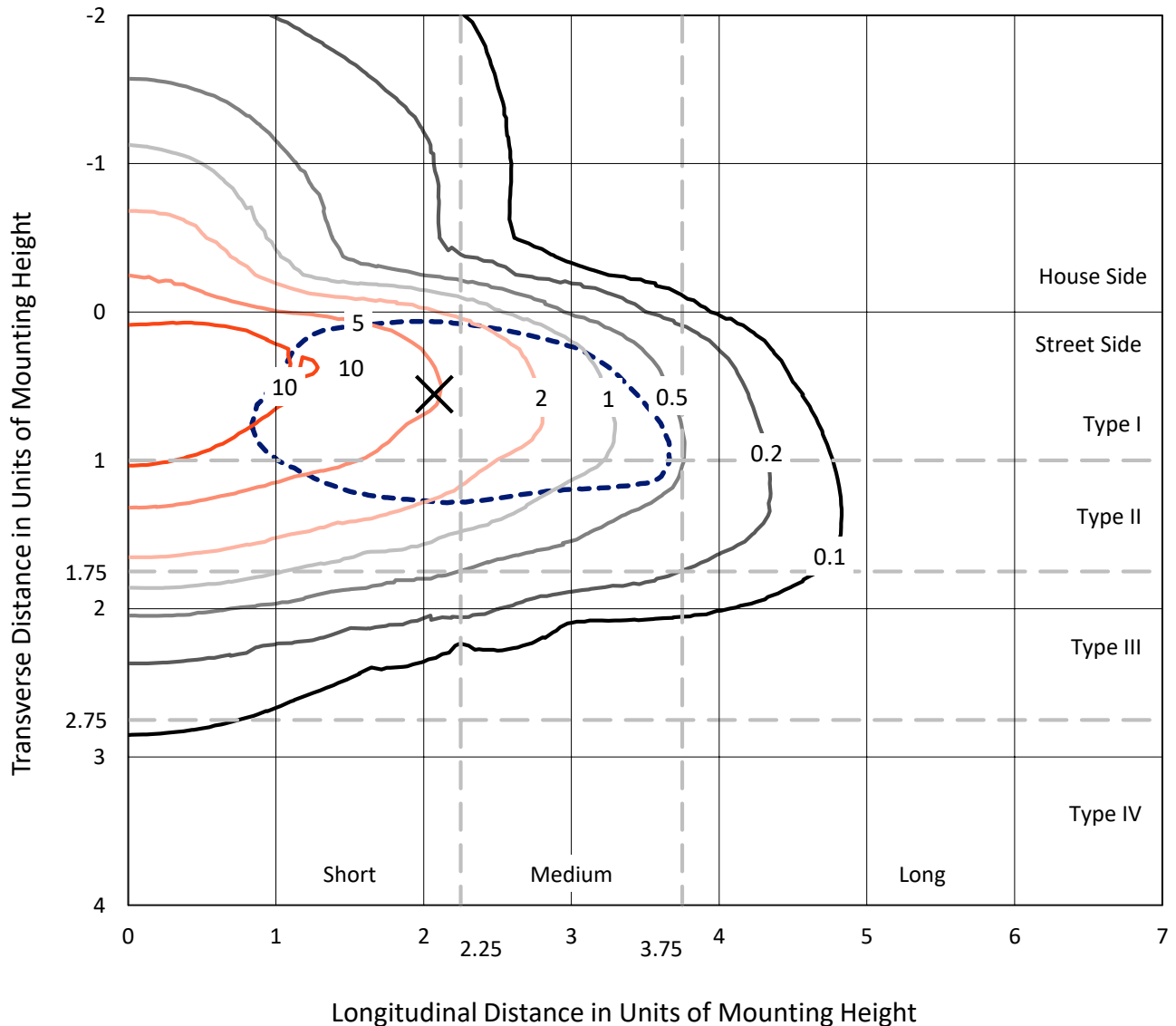
Input Watts (W): 67  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

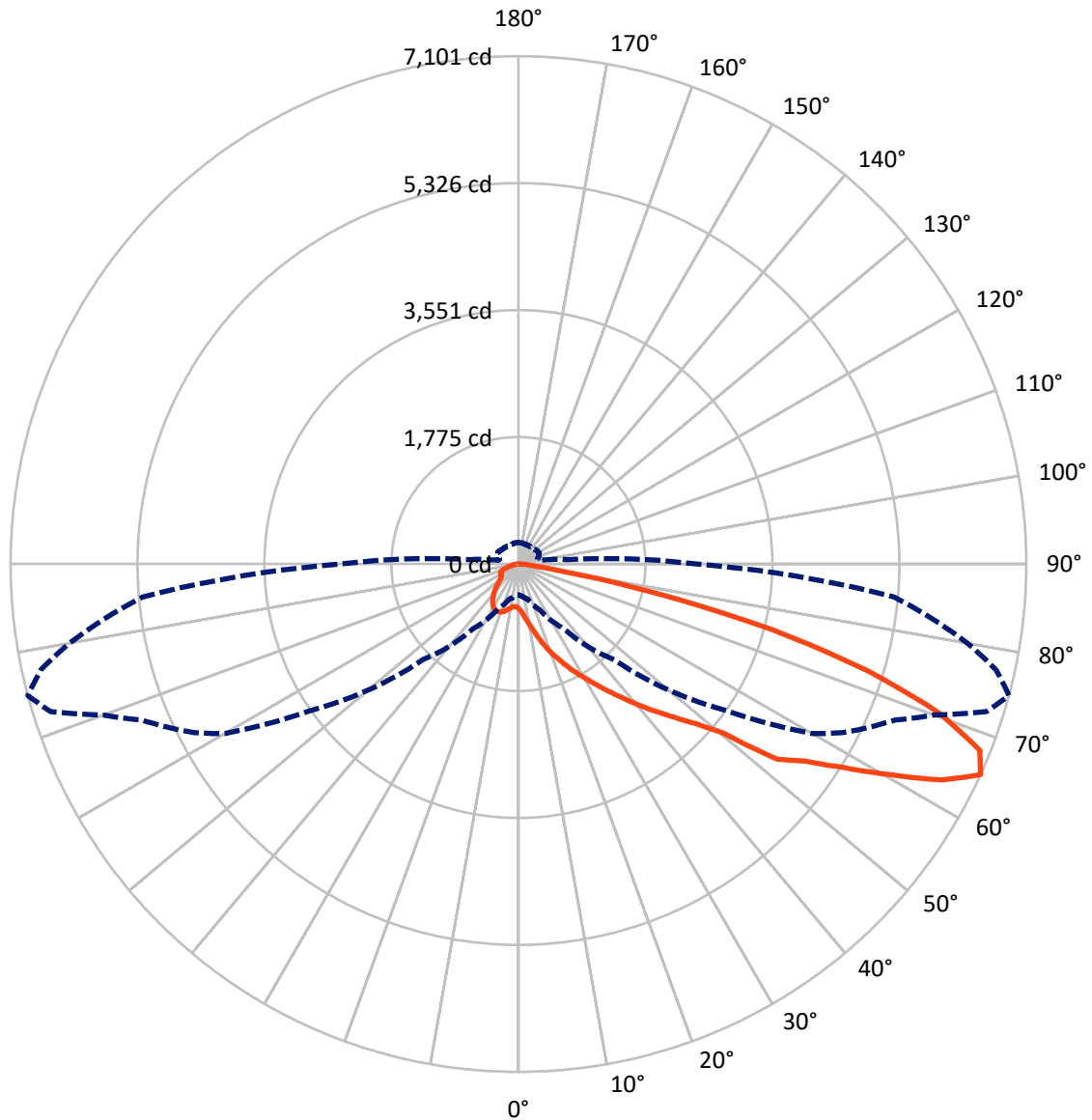
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 17.9 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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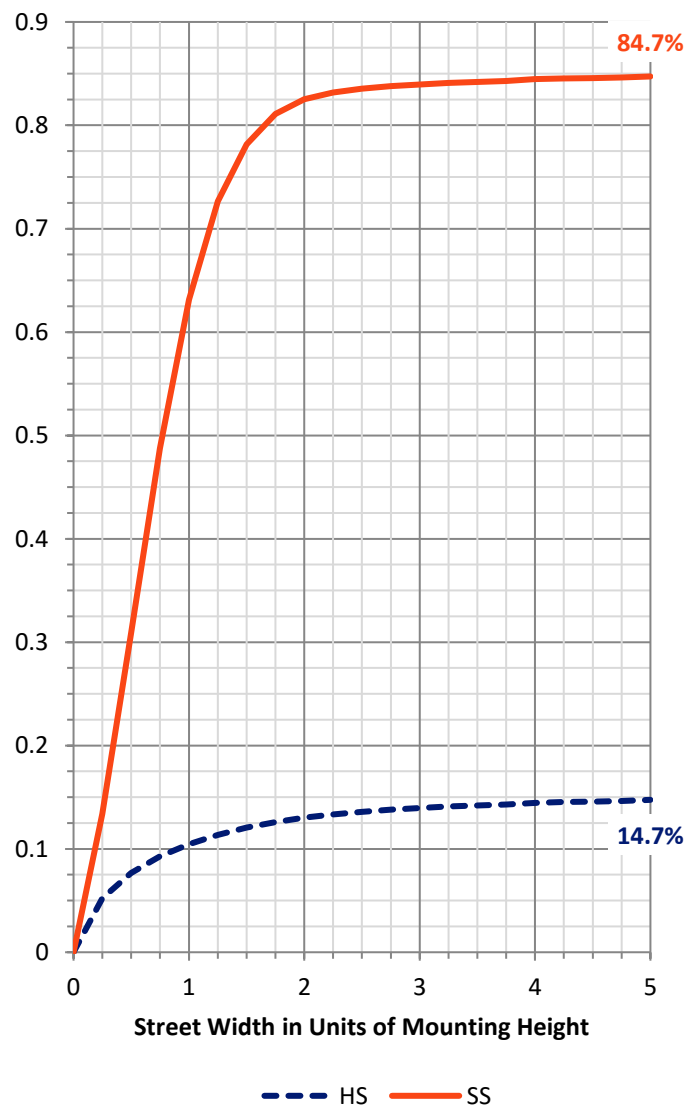
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	1079.5	0.0	1079.5
	% Fixture	15.0	0.0	15.0
<b>Street Side</b>	Lumens	6104.6	0.0	6104.6
	% Fixture	85.0	0.0	85.0
<b>Total</b>	Lumens	7184.2	0.0	7184.2
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	73.5	1.0
10°-20°	280.7	3.9
20°-30°	566.4	7.9
30°-40°	962.0	13.4
40°-50°	1341.7	18.7
50°-60°	1644.5	22.9
60°-70°	1547.2	21.5
70°-80°	678.4	9.4
80°-90°	89.8	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°	7184.2	100.0
0°-180°	7184.2	100.0

**Coefficient of Utilization**



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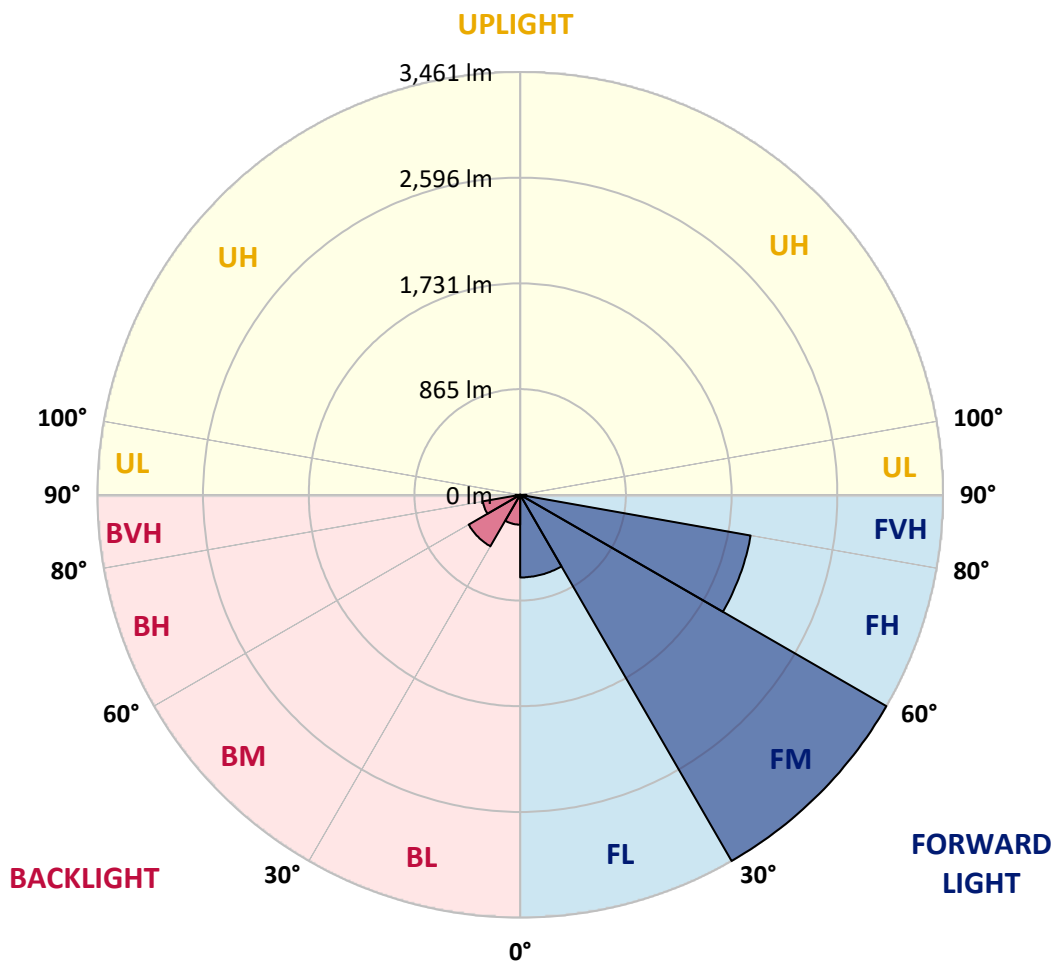
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	676.2	9.4			
FM	(30°-60°)	3461.0	48.2			
FH	(60°-80°)	1915.4	26.7			G2/5000
FVH	(80°-90°)	52.0	0.7			G1/100
BL	(0°-30°)	244.4	3.4	B1/500		
BM	(30°-60°)	487.1	6.8	B1/1000		
BH	(60°-80°)	310.3	4.3	B1/500		G1/500
BVH	(80°-90°)	37.7	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°	622.5	622.5	622.5	622.5	622.5	622.5	622.5	622.5	622.5	622.5	622.5
2.5°	783.8	774.7	775.6	762.8	744.0	723.4	706.6	697.4	689.7	687.3	674.5
5°	1025.1	1013.6	1009.6	980.3	936.4	884.3	832.7	812.6	796.2	786.0	761.4
7.5°	1222.5	1216.6	1211.1	1184.2	1140.7	1074.0	990.8	961.2	933.6	903.6	873.8
10°	1356.9	1354.6	1352.3	1333.6	1297.5	1239.4	1149.9	1117.5	1083.1	1044.7	1005.9
12.5°	1458.3	1458.3	1460.2	1444.6	1422.7	1377.9	1296.6	1266.4	1231.6	1191.4	1147.1
15°	1526.4	1528.3	1537.9	1542.4	1531.1	1502.2	1430.9	1404.4	1371.6	1331.8	1287.9
17.5°	1571.7	1575.3	1589.6	1604.6	1619.2	1609.2	1556.1	1531.5	1501.8	1465.2	1424.0
20°	1676.8	1672.2	1672.7	1668.1	1689.6	1697.4	1668.1	1647.6	1623.8	1590.5	1552.9
22.5°	1897.6	1888.9	1866.5	1809.4	1783.3	1780.5	1763.2	1752.2	1733.9	1712.9	1675.5
25°	2185.5	2175.4	2131.1	2037.0	1959.3	1887.5	1855.5	1848.7	1836.8	1822.6	1795.7
27.5°	2483.0	2472.1	2414.9	2296.1	2194.6	2049.8	1950.2	1940.9	1930.0	1924.1	1911.3
30°	2744.9	2733.0	2676.8	2556.1	2433.6	2260.9	2077.6	2045.6	2026.9	2028.7	2021.5
32.5°	2974.7	2964.2	2901.2	2778.2	2653.9	2486.2	2243.0	2193.2	2151.2	2135.7	2141.1
35°	3167.7	3158.1	3089.0	2965.1	2839.9	2700.6	2456.0	2381.1	2312.6	2269.6	2264.5
37.5°	3281.0	3275.5	3227.0	3121.9	2997.7	2895.3	2694.7	2611.4	2510.4	2447.8	2420.4
40°	3274.6	3280.5	3272.3	3224.8	3128.3	3053.8	2943.2	2861.0	2762.3	2669.0	2613.2
42.5°	3181.4	3189.6	3226.6	3251.2	3225.3	3179.9	3160.3	3099.0	3010.4	2911.7	2834.5
45°	3053.4	3060.7	3108.6	3197.7	3272.3	3285.1	3350.5	3319.8	3244.9	3160.8	3075.8
47.5°	2857.3	2871.5	2927.3	3069.0	3246.2	3369.6	3509.9	3524.1	3480.7	3411.2	3331.6
50°	2573.5	2592.3	2670.4	2871.9	3147.5	3456.4	3747.2	3801.1	3783.7	3713.3	3632.9
52.5°	2282.8	2301.5	2405.8	2620.1	2988.4	3492.1	3980.7	4118.7	4218.3	4291.0	4305.2
55°	1980.3	2001.3	2115.6	2362.4	2776.4	3446.8	4147.5	4304.3	4405.2	4481.1	4511.7
57.5°	1638.9	1662.6	1773.3	2022.8	2476.6	3265.0	4333.0	4555.2	4705.5	4822.5	4888.3
60°	1247.2	1276.9	1391.6	1643.0	2082.6	2916.7	4415.8	4744.3	4983.4	5158.8	5263.1
62.5°	790.6	820.8	940.1	1201.0	1634.3	2441.0	4181.7	4661.2	5068.8	5328.4	5519.4
65°	431.5	444.7	511.0	707.5	1101.9	1893.9	3588.5	4153.9	4741.2	5109.0	5402.5
67.5°	323.6	325.4	332.3	380.2	586.9	1278.8	2805.6	3323.5	3975.6	4449.1	4799.7
70°	283.4	283.4	284.3	284.7	318.5	692.8	1900.7	2377.4	2975.3	3454.2	3889.8
72.5°	254.1	251.3	250.4	245.0	249.5	355.1	1034.7	1462.9	1967.0	2504.5	2910.8
75°	219.3	218.9	218.9	213.4	216.1	250.0	448.8	701.9	1092.7	1593.1	1993.1
77.5°	189.7	186.5	186.9	183.7	192.4	191.5	213.0	289.3	475.8	836.8	1168.6
80°	156.3	154.1	155.4	153.5	167.3	141.7	143.5	176.9	236.3	367.0	517.3
82.5°	115.6	116.5	125.2	124.3	140.8	95.5	105.2	132.1	159.1	182.8	198.8
85°	67.6	69.0	90.0	94.6	103.3	50.2	64.4	78.6	88.7	98.3	102.4
87.5°	7.3	9.6	50.2	51.7	46.1	15.0	26.1	32.9	35.2	37.4	32.9
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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**CANDELA DISTRIBUTION (continued):**

	67.5°	70°	72.5°	75°	77.5°	80°	85°	90°	95°	100°	102.5°
0°	622.5	622.5	622.5	622.5	622.5	622.5	622.5	622.5	622.5	622.5	622.5
2.5°	670.4	664.5	658.1	654.5	648.0	642.6	632.5	624.3	615.2	608.8	606.0
5°	749.1	734.9	719.9	708.8	695.1	683.2	660.4	633.0	624.3	606.0	601.4
7.5°	851.4	825.8	800.3	779.2	755.4	735.8	697.4	648.0	641.7	612.4	606.0
10°	971.6	934.2	896.2	863.8	829.0	798.9	742.3	672.7	665.8	628.4	622.1
12.5°	1106.0	1060.3	1011.4	962.9	921.8	879.3	802.1	711.2	700.2	655.8	647.1
15°	1244.5	1195.1	1138.4	1079.9	1029.2	973.0	875.6	761.4	741.3	689.2	677.3
17.5°	1381.1	1327.7	1268.3	1202.9	1143.5	1076.2	955.1	817.6	782.9	722.1	707.1
20°	1513.3	1458.8	1396.2	1332.2	1258.2	1181.4	1036.6	872.9	819.9	749.5	729.9
22.5°	1633.4	1586.8	1524.2	1450.5	1375.7	1289.2	1119.2	928.2	852.3	770.6	745.4
25°	1760.0	1717.5	1655.3	1584.4	1497.2	1401.2	1204.7	980.8	878.4	781.9	750.8
27.5°	1888.0	1851.4	1792.9	1718.5	1624.8	1518.3	1291.6	1029.2	899.4	785.6	748.2
30°	2024.6	1996.3	1942.4	1859.2	1764.6	1646.6	1386.2	1076.8	912.7	780.6	735.8
32.5°	2153.9	2153.0	2105.0	2018.7	1916.8	1787.0	1485.7	1124.7	919.5	766.4	714.3
35°	2288.3	2307.1	2271.0	2188.7	2081.3	1937.4	1595.9	1175.9	919.9	741.3	686.4
37.5°	2441.0	2474.3	2458.4	2380.2	2267.3	2108.7	1725.3	1233.5	917.3	706.6	645.8
40°	2614.7	2660.3	2659.9	2594.1	2473.4	2300.6	1875.6	1297.9	910.8	663.2	597.8
42.5°	2813.4	2867.8	2882.9	2818.0	2696.0	2510.4	2047.9	1368.8	900.8	620.2	547.1
45°	3041.0	3089.0	3117.3	3057.0	2934.5	2739.0	2245.8	1449.2	888.4	564.9	489.0
47.5°	3284.6	3340.3	3382.9	3331.2	3200.5	2999.4	2480.2	1552.9	883.9	501.9	426.4
50°	3586.7	3644.3	3736.1	3712.9	3641.1	3479.4	2976.2	1797.9	885.7	441.9	373.9
52.5°	4336.2	4468.4	4584.4	4532.8	4362.3	4084.8	3379.2	1934.1	847.3	393.0	337.3
55°	4562.5	4712.3	4883.8	4862.3	4698.6	4418.9	3697.8	2047.9	810.3	357.4	313.5
57.5°	4958.2	5135.1	5374.6	5370.0	5169.4	4854.5	4107.8	2184.1	794.3	336.9	301.7
60°	5377.3	5602.6	5933.5	5985.2	5767.2	5439.4	4592.1	2351.4	796.6	325.4	294.8
62.5°	5683.5	6013.9	6495.2	6649.7	6392.8	6031.8	5094.9	2518.6	782.9	312.1	286.5
65°	5702.2	6178.0	6860.8	7101.2	6841.2	6377.3	5272.2	2485.8	700.6	294.3	273.3
67.5°	5245.3	5865.0	6694.5	6958.2	6692.1	6164.3	4961.4	2173.2	569.5	263.2	250.4
70°	4368.7	5088.1	5949.1	6243.0	6023.1	5488.8	4318.0	1735.7	425.4	222.1	216.1
72.5°	3376.0	4046.9	4828.9	5100.8	4932.7	4462.8	3405.7	1265.1	303.9	180.0	175.5
75°	2413.6	2984.9	3552.4	3656.2	3490.3	3058.8	2209.7	790.2	213.0	147.6	141.3
77.5°	1494.4	1866.1	2069.8	1936.4	1724.8	1433.7	899.4	390.3	141.7	120.2	113.8
80°	663.2	778.3	726.7	647.6	511.4	420.4	274.7	173.2	91.5	92.8	89.1
82.5°	223.0	235.8	229.4	228.0	205.6	180.0	116.5	75.0	51.1	59.4	58.0
85°	108.7	113.8	114.3	118.4	102.8	80.0	31.5	29.7	21.9	32.0	33.3
87.5°	32.9	33.3	30.2	32.9	26.5	18.3	5.9	8.2	4.1	7.8	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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**CANDELA DISTRIBUTION (continued):**

	105°	107.5°	110°	112.5°	115°	117.5°	120°	122.5°	125°	127.5°	130°
0°	622.5	622.5	622.5	622.5	622.5	622.5	622.5	622.5	622.5	622.5	622.5
2.5°	601.0	599.1	596.0	592.3	591.4	586.9	585.4	583.2	581.8	579.5	577.7
5°	595.5	592.3	588.6	584.5	584.5	578.2	575.4	572.6	572.6	568.6	566.7
7.5°	601.0	596.9	592.8	589.1	590.4	583.2	580.4	577.7	577.3	573.1	571.3
10°	616.5	612.4	607.4	603.7	602.3	596.4	593.2	589.1	586.4	583.6	580.8
12.5°	640.3	634.8	628.4	620.6	617.5	612.4	607.4	601.9	595.5	592.8	588.6
15°	668.6	659.5	650.8	641.2	632.5	627.5	620.6	611.9	603.2	599.7	594.1
17.5°	691.9	682.3	670.0	658.6	643.0	638.9	629.3	618.8	604.7	603.2	595.1
20°	711.6	696.9	681.9	668.2	644.4	642.1	630.2	617.9	597.8	597.8	587.7
22.5°	722.5	702.5	684.7	666.4	636.6	634.8	621.1	606.5	581.8	582.7	570.4
25°	724.4	700.2	677.8	655.8	621.5	618.4	601.0	585.0	558.0	556.2	543.4
27.5°	717.1	688.8	662.7	636.2	599.1	592.3	573.1	553.9	527.4	522.8	509.1
30°	700.2	666.8	637.5	606.9	568.0	557.1	537.0	517.3	490.4	484.5	471.7
32.5°	673.2	635.3	602.8	572.2	529.3	515.6	495.4	475.8	449.7	445.2	433.2
35°	637.5	595.1	560.8	528.4	485.4	471.2	452.0	434.7	410.8	409.1	400.8
37.5°	592.8	548.4	511.9	480.8	440.1	432.8	413.2	400.4	380.7	382.5	378.4
40°	542.1	496.7	462.1	434.7	399.5	393.0	381.2	371.5	354.7	359.7	360.2
42.5°	490.8	445.6	414.1	389.3	359.3	355.1	346.9	341.4	328.6	338.7	342.8
45°	432.8	390.8	363.8	345.0	322.6	322.6	318.5	318.1	309.4	323.6	327.7
47.5°	376.5	343.7	325.0	313.5	298.0	305.2	303.9	307.6	301.2	315.8	319.5
50°	334.1	311.2	299.8	294.3	283.4	294.8	297.5	302.6	297.1	309.9	312.6
52.5°	307.1	292.1	285.6	284.3	276.5	290.6	295.2	299.8	293.4	305.2	304.8
55°	292.1	282.0	279.7	282.4	276.5	290.2	294.8	298.0	292.5	300.7	300.2
57.5°	286.5	281.1	282.4	286.5	282.4	293.9	296.1	299.8	294.3	298.0	299.8
60°	286.1	286.1	291.5	297.1	294.3	302.6	303.9	303.5	298.4	298.9	299.8
62.5°	283.4	290.2	299.3	308.0	307.1	317.2	318.1	312.1	308.0	303.5	302.1
65°	274.7	286.1	299.3	311.2	313.0	328.6	330.4	324.5	321.7	313.9	308.0
67.5°	255.4	270.1	285.6	300.2	303.5	324.5	328.6	330.9	332.3	327.2	319.5
70°	223.0	238.1	254.1	271.0	275.6	298.9	307.6	318.1	326.3	333.6	330.9
72.5°	181.5	195.2	208.9	224.4	231.3	255.4	266.9	285.2	298.0	316.7	324.5
75°	143.9	152.2	160.4	170.0	175.5	199.3	213.4	235.4	252.8	278.8	296.1
77.5°	113.3	117.4	121.5	125.7	128.0	141.3	152.6	174.6	194.7	227.6	253.2
80°	87.3	89.6	90.0	91.5	90.5	96.9	101.0	114.3	131.7	164.1	194.3
82.5°	56.3	58.0	58.9	61.3	56.7	64.9	67.6	69.0	78.2	101.9	123.4
85°	31.5	32.0	32.4	33.3	27.0	35.2	35.6	33.3	32.4	42.0	47.6
87.5°	7.8	7.3	7.8	7.8	3.2	7.3	7.3	5.0	3.7	6.9	5.5
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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CATALOG NUMBER: NAV-AF-01-D-UNV-T2R-1200

**CANDELA DISTRIBUTION (continued):**

	135°	145°	155°	165°	175°	180°
0°	622.5	622.5	622.5	622.5	622.5	622.5
2.5°	573.6	572.6	573.1	570.8	569.9	570.4
5°	564.5	562.6	562.6	561.2	559.3	559.3
7.5°	568.6	564.9	563.5	560.8	558.0	558.5
10°	574.9	568.6	564.0	559.9	556.7	556.7
12.5°	579.1	567.6	560.8	555.3	551.7	551.7
15°	580.0	562.6	552.5	546.6	543.0	543.0
17.5°	574.5	552.5	539.7	531.9	527.8	528.8
20°	560.8	533.8	518.7	510.5	506.4	506.9
22.5°	539.3	508.2	490.8	481.2	477.1	477.1
25°	510.0	476.2	457.5	449.7	446.0	446.0
27.5°	476.7	441.9	425.4	419.5	417.3	417.3
30°	439.2	410.4	398.5	394.4	390.8	390.8
32.5°	407.6	387.1	383.0	377.5	367.9	367.4
35°	382.5	380.2	377.1	360.6	346.9	345.0
37.5°	368.8	382.5	362.4	334.1	323.2	322.6
40°	361.5	374.3	339.5	325.8	324.5	324.5
42.5°	344.1	353.3	338.2	330.4	330.4	330.9
45°	325.8	333.6	341.4	334.5	336.9	337.3
47.5°	313.0	328.6	341.4	335.4	340.0	342.8
50°	301.2	324.1	334.5	334.5	339.5	340.0
52.5°	298.4	317.6	328.2	333.2	333.6	331.3
55°	298.9	312.6	323.2	329.5	326.7	326.7
57.5°	298.4	309.9	319.0	321.3	322.6	322.6
60°	298.9	306.2	313.5	312.6	317.2	317.2
62.5°	300.2	301.2	304.8	303.9	310.8	310.8
65°	303.5	294.8	292.5	293.4	301.7	301.2
67.5°	309.4	286.1	278.8	279.3	291.1	289.3
70°	318.1	274.3	263.2	260.5	280.6	277.4
72.5°	320.8	260.5	243.2	240.4	252.3	243.2
75°	308.0	249.5	221.7	212.5	207.5	204.8
77.5°	274.7	242.6	199.3	180.0	172.3	170.4
80°	227.6	228.5	170.0	147.2	170.9	170.4
82.5°	171.9	197.4	136.2	127.5	123.9	103.3
85°	83.2	148.5	104.6	87.8	52.6	49.8
87.5°	7.3	62.2	60.4	39.3	17.8	16.9
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)