

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: P196209

Luminaire Tested: **NAV-AF-03-D-UNV-SLL-800**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196209  
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-03-D-UNV-SLL-800  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(3) 70 CRI, 4000K, 800mA 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: 13222.7 lumens  
Efficiency: N/A  
Efficacy: 106.6 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 1.5' x H: 0')  
IES Classification: Type IV - Short - Non-Cutoff  
BUG Rating: B2 - U0 - G3

Input Watts (W): 124  
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

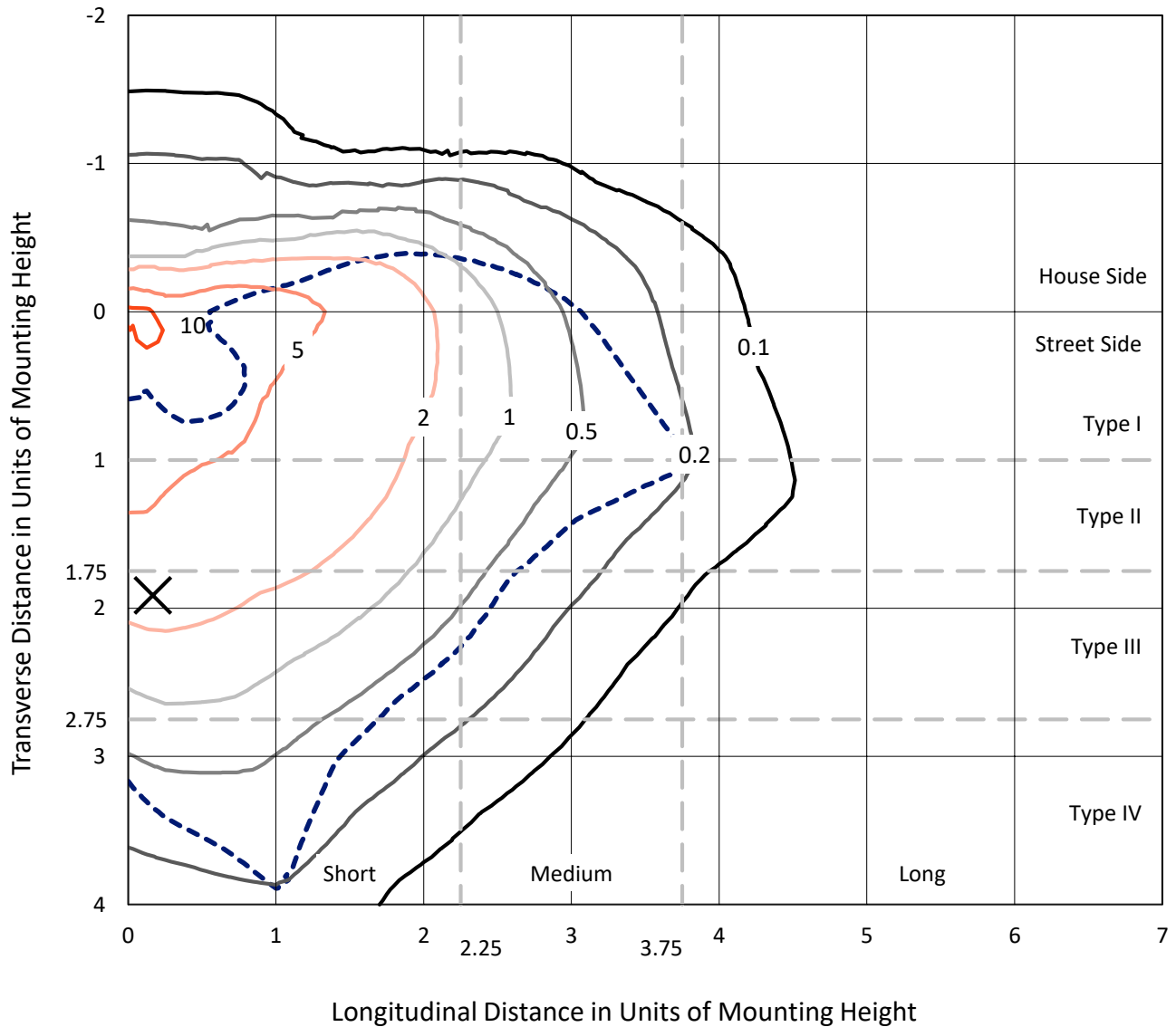


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### Iso-Footcandle Lines of Horizontal Illumination

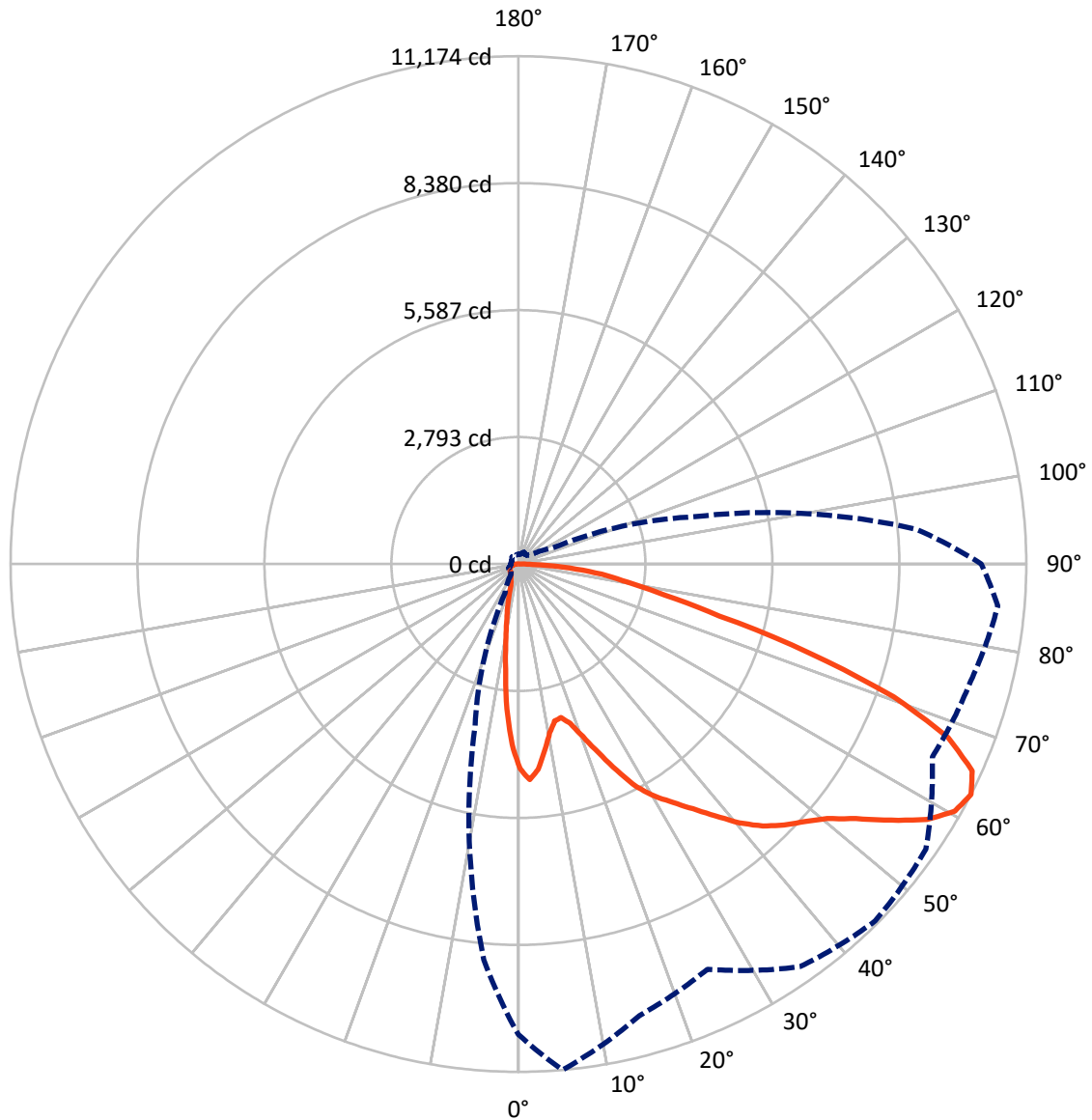
✕ Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 12.9 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
<b>House Side</b>	Lumens	2342.4	0.0	2342.4
	% Fixture	17.7	0.0	17.7
<b>Street Side</b>	Lumens	10880.2	0.0	10880.2
	% Fixture	82.3	0.0	82.3
<b>Total</b>	Lumens	13222.7	0.0	13222.7
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	327.8	2.5
10°-20°	598.8	4.5
20°-30°	861.2	6.5
30°-40°	1319.0	10.0
40°-50°	1928.5	14.6
50°-60°	2805.9	21.2
60°-70°	3251.0	24.6
70°-80°	1694.7	12.8
80°-90°	435.6	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°	13222.7	100.0
0°-180°	13222.7	100.0

**Coefficient of Utilization**



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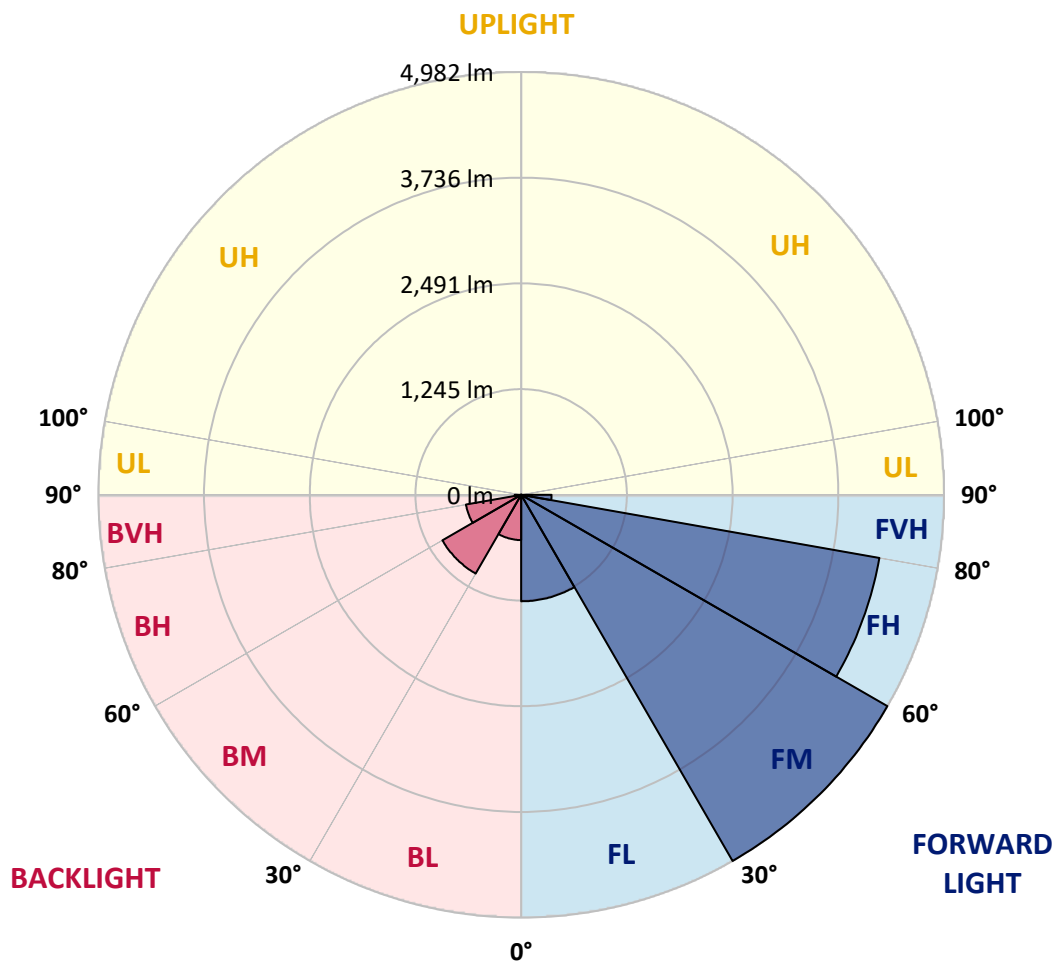
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1254.9	9.5			
FM	(30°-60°)	4981.7	37.7			
FH	(60°-80°)	4285.3	32.4			G2/5000
FVH	(80°-90°)	358.4	2.7			G3/500
BL	(0°-30°)	532.9	4.0	B2/1000		
BM	(30°-60°)	1071.7	8.1	B2/2500		
BH	(60°-80°)	660.5	5.0	B2/1000		G2/1000
BVH	(80°-90°)	77.2	0.6			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B2-U0-G3**

Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	4507.8	4507.8	4507.8	4507.8	4507.8	4507.8	4507.8	4507.8	4507.8	4507.8	4507.8
2.5°	4653.6	4752.3	4865.5	5013.1	5113.7	5154.0	5187.6	5131.0	5076.4	4973.8	4937.4
5°	4346.8	4536.6	4848.2	5144.4	5405.3	5554.8	5600.8	5496.3	5310.3	5041.9	4899.9
7.5°	3891.4	4141.6	4579.8	5015.9	5389.9	5639.1	5657.3	5450.3	5084.1	4644.0	4413.9
10°	3493.6	3776.3	4283.5	4771.6	5167.4	5422.5	5372.6	5082.1	4640.2	4139.7	3880.0
12.5°	3262.5	3545.3	4062.0	4557.8	4930.6	5027.5	4925.9	4681.4	4262.4	3761.0	3499.3
15°	3213.6	3505.0	3983.5	4401.5	4632.5	4570.1	4469.5	4345.8	4047.7	3637.4	3384.2
17.5°	3361.2	3687.2	4087.9	4317.1	4307.5	4158.0	4073.6	4097.5	4046.7	3771.6	3507.0
20°	3665.1	4050.6	4353.5	4294.0	4048.6	3838.7	3789.8	3977.7	4212.6	4108.1	3817.6
22.5°	4064.9	4504.1	4715.9	4360.2	3913.5	3687.2	3677.6	3971.0	4514.6	4617.2	4263.4
25°	4516.5	5028.4	5081.2	4477.1	3899.1	3673.8	3665.1	4074.5	4877.9	5121.4	4762.9
27.5°	5068.7	5557.7	5386.0	4633.5	3962.4	3713.1	3718.8	4251.0	5256.6	5620.0	5325.7
30°	5484.8	5933.5	5574.0	4786.9	4064.0	3782.2	3796.5	4441.8	5460.8	5966.1	5775.3
32.5°	5874.0	6254.6	5754.2	4938.3	4212.6	3884.7	3934.6	4679.5	5706.2	6263.3	6200.0
35°	6304.5	6614.2	5954.6	5100.3	4425.4	4064.9	4136.8	4905.8	5949.8	6560.5	6620.8
37.5°	6792.5	7025.4	6172.2	5329.5	4732.2	4398.6	4438.9	5136.7	6119.5	6889.3	7072.5
40°	7300.6	7486.6	6409.9	5635.3	5178.0	4849.2	4868.3	5433.0	6252.7	7229.7	7510.6
42.5°	7736.8	7881.5	6648.7	6015.0	5690.0	5308.4	5324.7	5752.3	6380.2	7523.0	7861.5
45°	8085.8	8192.2	6873.9	6414.7	6236.4	5881.7	5877.9	6077.2	6550.9	7770.3	8130.8
47.5°	8410.8	8467.4	7125.2	6804.0	6803.0	6619.9	6482.8	6460.8	6778.1	7978.4	8365.7
50°	8782.7	8803.8	7456.9	7197.1	7495.3	7466.4	7213.3	6947.8	7072.5	8212.4	8612.1
52.5°	9300.5	9301.4	7868.1	7580.6	8259.3	8350.3	8056.0	7499.0	7507.6	8667.8	9037.8
55°	9909.2	9951.5	8404.1	8039.8	9058.8	9214.2	8937.1	8153.8	8132.8	9402.1	9728.1
57.5°	10380.0	10603.4	9028.2	8614.1	9805.7	10008.0	9784.6	8832.7	8900.7	10159.4	10297.5
60°	10512.3	11034.8	9650.4	9258.3	10437.5	10741.4	10514.2	9566.0	9652.4	10651.3	10461.5
62.5°	10354.1	11173.8	10284.1	9835.5	10812.4	11103.8	10940.9	10046.4	10264.9	10588.1	10184.4
65°	9885.3	10972.5	10834.4	10080.9	10596.6	10700.2	10657.1	10071.3	10597.6	9989.8	9418.4
67.5°	8790.4	10196.0	10589.0	9556.4	9589.0	9477.8	9421.3	9386.8	10223.7	9024.4	8210.4
70°	7149.1	8760.8	9418.4	7997.6	7756.0	7648.6	7462.6	7922.8	9189.3	7688.9	6757.0
72.5°	5506.9	6702.4	7725.3	6062.9	5560.6	5597.0	5386.0	6058.1	7612.2	5944.1	5158.8
75°	3910.6	4570.1	6166.4	4356.4	3691.0	3689.2	3672.8	4360.2	6006.4	4266.3	3774.5
77.5°	2818.6	3290.3	4831.0	2915.4	2619.2	2652.7	2599.1	2963.4	4682.4	3068.9	2796.5
80°	2248.1	2436.1	3122.6	1944.2	1950.1	2028.6	2017.2	2026.7	3080.3	2222.3	2090.9
82.5°	1615.4	1849.4	2387.2	1489.8	1289.4	1372.9	1389.2	1503.2	2173.4	1571.4	1378.6
85°	828.3	1127.5	2196.4	1290.5	806.3	668.2	768.8	1185.9	1887.8	941.4	672.1
87.5°	161.1	312.5	1609.7	717.1	362.4	183.1	302.0	502.4	1097.7	170.6	83.4
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°	4507.8	4507.8	4507.8	4507.8	4507.8	4507.8	4507.8	4507.8	4507.8	4507.8	4507.8
2.5°	4875.1	4752.3	4637.3	4518.4	4426.4	4314.2	4203.9	4108.1	4015.1	3953.7	3972.9
5°	4756.2	4457.1	4188.6	3939.4	3793.6	3618.2	3461.9	3330.5	3228.9	3163.8	3203.1
7.5°	4214.5	3809.9	3456.1	3127.4	2920.2	2693.0	2510.8	2382.5	2303.8	2259.7	2323.9
10°	3660.3	3205.9	2809.0	2466.7	2262.6	2069.8	1904.9	1768.8	1663.3	1613.5	1639.4
12.5°	3263.4	2758.2	2342.1	2112.1	1936.7	1764.1	1593.3	1434.3	1300.0	1238.7	1226.2
15°	3114.9	2517.6	2092.9	1835.9	1661.5	1473.6	1289.4	1118.8	991.3	938.6	927.1
17.5°	3180.0	2465.8	1945.2	1641.3	1388.2	1160.0	953.0	791.9	698.0	668.2	671.1
20°	3409.2	2485.0	1826.4	1440.9	1128.4	858.1	651.0	539.7	499.5	492.8	500.4
22.5°	3723.6	2563.6	1740.0	1268.4	899.3	624.1	484.2	431.4	420.8	419.9	427.6
25°	4138.8	2717.0	1682.5	1115.0	710.4	494.7	421.9	392.1	383.5	385.4	393.1
27.5°	4627.7	2911.6	1645.1	982.6	583.9	441.0	394.0	368.2	359.6	361.4	367.1
30°	5074.4	3082.3	1589.6	883.0	524.5	421.9	378.7	352.8	341.3	341.3	345.1
32.5°	5474.2	3229.9	1524.4	808.2	469.7	378.7	343.2	323.0	314.5	317.3	319.3
35°	5829.0	3307.6	1473.6	764.1	425.6	348.9	313.5	292.4	280.9	282.8	285.7
37.5°	6177.9	3337.3	1440.0	740.1	394.0	330.7	298.2	280.9	268.4	266.5	265.6
40°	6509.6	3330.5	1408.4	733.5	373.0	317.3	288.6	273.2	260.8	257.9	257.0
42.5°	6796.3	3308.5	1378.6	715.2	358.5	307.7	280.9	267.5	255.0	251.1	249.3
45°	7058.1	3295.1	1346.0	681.7	366.2	303.9	277.1	262.7	251.1	246.4	244.5
47.5°	7348.6	3343.0	1309.6	645.2	364.3	304.8	277.1	260.8	249.3	244.5	242.5
50°	7694.6	3505.0	1264.6	595.4	347.1	325.9	276.1	257.9	247.3	244.5	240.6
52.5°	8183.6	3767.7	1202.3	531.1	333.6	348.0	275.2	253.1	244.5	239.7	234.9
55°	8853.7	4030.4	1121.7	463.1	312.5	332.7	277.1	247.3	237.7	232.9	227.2
57.5°	9403.1	4229.8	1020.1	406.5	293.4	314.5	274.2	240.6	230.1	225.3	220.5
60°	9367.6	4249.0	923.2	370.1	281.8	282.8	280.9	235.9	223.4	219.5	215.7
62.5°	8787.6	4012.2	833.1	351.9	273.2	257.9	286.6	230.1	216.7	212.9	209.9
65°	7822.1	3460.9	785.2	351.9	265.6	244.5	250.2	222.4	209.9	206.1	204.2
67.5°	6597.8	2781.2	740.1	359.6	255.0	234.9	227.2	214.7	203.3	199.4	197.5
70°	5288.2	2188.7	708.5	355.7	245.4	224.3	214.7	204.2	192.7	191.7	189.9
72.5°	4148.4	1758.2	694.1	355.7	231.1	211.9	202.2	194.7	183.1	182.2	179.3
75°	3323.9	1320.1	634.6	348.9	216.7	195.6	187.0	180.2	168.7	169.7	167.8
77.5°	2574.2	933.7	530.2	314.5	198.5	177.4	170.6	165.8	152.4	153.4	153.4
80°	2013.3	607.8	411.3	260.8	177.4	156.3	151.5	147.6	133.3	135.1	135.1
82.5°	1379.6	361.4	298.2	209.9	152.4	133.3	132.3	126.5	111.2	112.2	114.1
85°	753.5	237.7	198.5	155.3	119.9	108.3	106.4	103.5	89.2	89.2	90.1
87.5°	139.0	127.5	116.9	102.6	80.5	77.6	74.8	77.6	67.1	65.2	65.2
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):**

	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°	285°
0°	4507.8	4507.8	4507.8	4507.8	4507.8	4507.8	4507.8	4507.8	4507.8	4507.8	4507.8
2.5°	3927.8	3861.7	3815.7	3775.4	3678.5	3685.3	3698.7	3717.9	3657.5	3689.2	3728.5
5°	3163.8	3109.2	3067.9	3003.7	2868.5	2820.6	2789.9	2776.4	2686.3	2705.5	2747.6
7.5°	2332.5	2331.6	2317.2	2245.3	2082.3	1983.6	1918.3	1898.3	1842.6	1863.7	1928.0
10°	1642.2	1659.5	1652.8	1588.5	1442.9	1371.9	1357.6	1397.8	1398.8	1440.0	1550.3
12.5°	1186.9	1177.3	1168.7	1115.9	1006.7	995.1	1027.8	1083.3	1096.8	1140.9	1255.9
15°	885.9	862.9	858.1	816.8	744.9	755.4	779.4	808.2	809.2	839.8	934.8
17.5°	664.4	664.4	672.1	645.2	593.4	588.6	576.2	568.6	557.0	569.5	621.2
20°	515.8	539.7	558.9	543.6	496.6	473.6	449.6	434.3	425.6	426.7	442.0
22.5°	442.0	461.1	486.1	478.4	439.1	409.4	394.0	383.5	376.8	376.8	385.4
25°	404.6	417.1	440.1	436.2	402.6	378.7	366.2	355.7	348.0	347.1	355.7
27.5°	374.8	382.5	397.8	396.0	361.4	346.1	338.4	331.7	326.9	325.9	334.6
30°	348.0	351.9	359.6	356.6	330.7	315.4	312.5	309.6	306.8	307.7	320.2
32.5°	324.1	326.9	331.7	327.9	303.0	289.5	284.7	280.9	278.0	280.9	295.3
35°	297.2	305.9	311.6	309.6	282.8	266.5	255.9	246.4	242.5	245.4	261.8
37.5°	274.2	288.6	296.2	294.3	266.5	247.3	233.9	232.0	232.0	235.9	252.2
40°	265.6	276.1	282.8	280.0	252.2	232.9	225.3	222.4	223.4	227.2	244.5
42.5°	257.9	267.5	269.4	263.6	235.9	223.4	218.6	214.7	216.7	221.5	238.8
45°	251.1	258.8	257.9	249.3	222.4	213.8	213.8	210.9	211.9	215.7	233.9
47.5°	246.4	250.2	248.3	239.7	212.9	206.1	209.0	209.0	210.9	213.8	232.0
50°	238.8	241.6	239.7	232.0	205.2	199.4	202.2	206.1	208.1	210.9	227.2
52.5°	231.1	232.9	232.0	224.3	197.5	193.6	193.6	197.5	201.3	205.2	219.5
55°	223.4	225.3	226.3	220.5	191.7	187.9	187.0	187.0	190.8	196.5	211.9
57.5°	217.6	217.6	219.5	215.7	186.0	181.2	176.4	177.4	182.2	187.0	202.2
60°	210.9	211.9	214.7	210.9	178.3	170.6	166.8	171.7	173.5	178.3	194.7
62.5°	205.2	205.2	207.0	204.2	171.7	164.0	161.1	165.8	165.8	170.6	187.0
65°	200.4	199.4	199.4	198.5	164.9	157.2	155.3	157.2	158.1	163.0	179.3
67.5°	196.5	191.7	191.7	193.6	158.1	150.5	149.6	149.6	150.5	156.3	170.6
70°	187.9	184.0	183.1	189.9	151.5	141.9	141.9	139.9	141.9	144.7	160.1
72.5°	178.3	175.4	174.5	184.0	144.7	132.3	130.4	129.4	130.4	133.3	147.6
75°	165.8	164.0	165.8	180.2	138.1	121.7	118.9	117.9	117.9	118.9	134.2
77.5°	151.5	149.6	164.0	167.8	134.2	109.3	106.4	104.5	102.6	102.6	119.9
80°	134.2	133.3	158.1	141.9	128.5	95.9	91.0	88.2	86.2	85.3	102.6
82.5°	116.9	115.1	135.1	111.2	106.4	78.7	71.9	66.2	63.3	63.3	78.7
85°	95.9	94.9	106.4	81.5	73.9	57.5	48.0	43.2	39.3	39.3	50.8
87.5°	70.0	68.0	66.2	48.9	37.4	25.9	18.2	17.3	15.3	14.4	21.1
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-SLL-800

**CANDELA DISTRIBUTION (continued):**

	295°	305°	315°	325°	335°	345°	355°	360°
0°	4507.8	4507.8	4507.8	4507.8	4507.8	4507.8	4507.8	4507.8
2.5°	3787.0	3866.4	4017.0	4140.7	4305.6	4437.9	4588.4	4653.6
5°	2825.3	2950.9	3181.0	3377.6	3649.8	3901.9	4189.6	4346.8
7.5°	2026.7	2212.7	2387.2	2632.7	2973.0	3311.4	3683.3	3891.4
10°	1676.8	1847.4	1997.0	2171.5	2434.2	2814.8	3258.7	3493.6
12.5°	1389.2	1573.3	1731.4	1918.3	2138.9	2483.1	2989.3	3262.5
15°	1065.1	1265.5	1455.4	1680.6	1951.0	2344.1	2908.8	3213.6
17.5°	729.6	944.3	1178.2	1453.4	1779.3	2285.6	2985.5	3361.2
20°	495.6	652.8	906.9	1232.9	1625.1	2257.8	3154.2	3665.1
22.5°	407.4	478.4	669.2	1025.8	1498.4	2288.4	3428.3	4064.9
25°	373.9	412.2	520.6	843.6	1401.6	2370.0	3799.3	4516.5
27.5°	352.8	385.4	456.3	713.3	1312.4	2481.2	4251.0	5068.7
30°	340.3	371.0	430.5	646.2	1231.0	2577.0	4639.2	5484.8
32.5°	312.5	335.5	384.4	607.8	1172.5	2654.7	4981.5	5874.0
35°	279.0	306.8	347.1	582.9	1170.6	2691.1	5303.6	6304.5
37.5°	266.5	293.4	323.0	569.5	1182.1	2721.8	5697.6	6792.5
40°	258.8	282.8	306.8	567.5	1191.6	2745.8	6083.1	7300.6
42.5°	252.2	276.1	303.9	554.1	1187.9	2778.3	6424.3	7736.8
45°	250.2	274.2	310.7	534.0	1186.9	2829.2	6695.6	8085.8
47.5°	248.3	284.7	308.7	512.0	1183.0	2936.6	7001.5	8410.8
50°	246.4	303.9	295.3	481.3	1154.3	3119.7	7412.8	8782.7
52.5°	245.4	306.8	280.9	439.1	1102.5	3391.0	8014.8	9300.5
55°	241.6	291.4	255.9	383.5	1027.8	3683.3	8660.1	9909.2
57.5°	232.9	259.8	241.6	328.9	920.3	3887.6	9136.5	10380.0
60°	254.1	223.4	232.0	301.1	791.9	3924.0	9157.7	10512.3
62.5°	242.5	203.3	222.4	291.4	701.7	3686.2	8738.7	10354.1
65°	193.6	192.7	213.8	301.1	688.3	3154.2	8031.2	9885.3
67.5°	176.4	185.1	205.2	312.5	696.9	2485.0	6990.0	8790.4
70°	164.9	175.4	193.6	323.0	712.3	1957.7	5627.7	7149.1
72.5°	153.4	162.0	182.2	333.6	701.7	1544.5	4504.1	5506.9
75°	139.0	146.7	165.8	305.9	602.1	1135.1	3578.9	3910.6
77.5°	122.8	129.4	145.8	241.6	452.6	790.0	2680.5	2818.6
80°	105.5	108.3	120.8	176.4	295.3	472.6	2040.2	2248.1
82.5°	83.4	84.4	92.1	129.4	184.0	302.0	1415.0	1615.4
85°	53.7	55.6	59.4	91.0	123.7	193.6	722.9	828.3
87.5°	18.2	21.1	21.1	44.1	60.4	107.4	221.5	161.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)