

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: P196221

Luminaire Tested: **NAV-AF-03-D-UNV-SLL-1200**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196221  
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-1200  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(3) 70 CRI, 4000K, 1200mA 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: 17952.8 lumens  
Efficiency: N/A  
Efficacy: 94.0 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

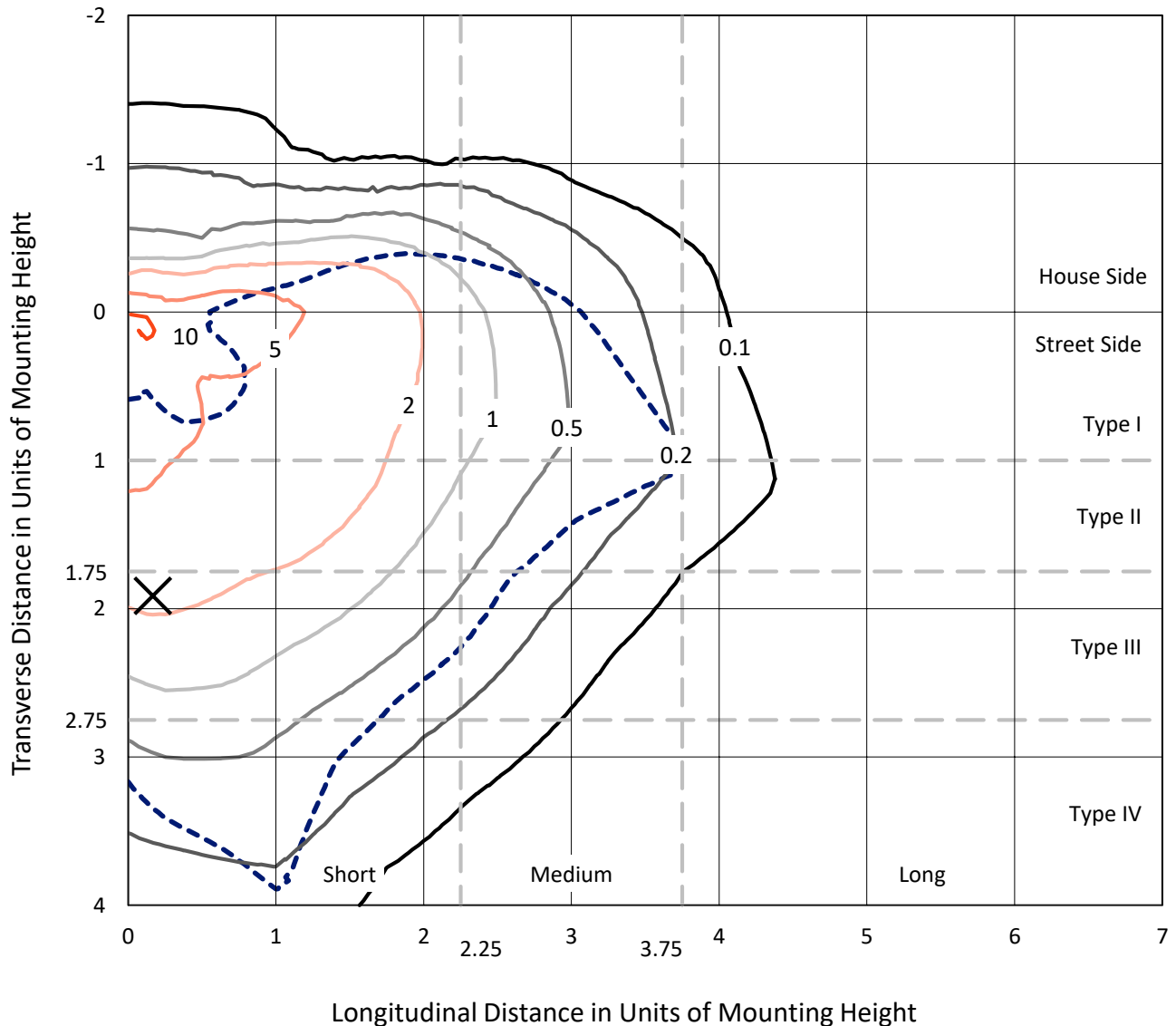
Input Watts (W): 191  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

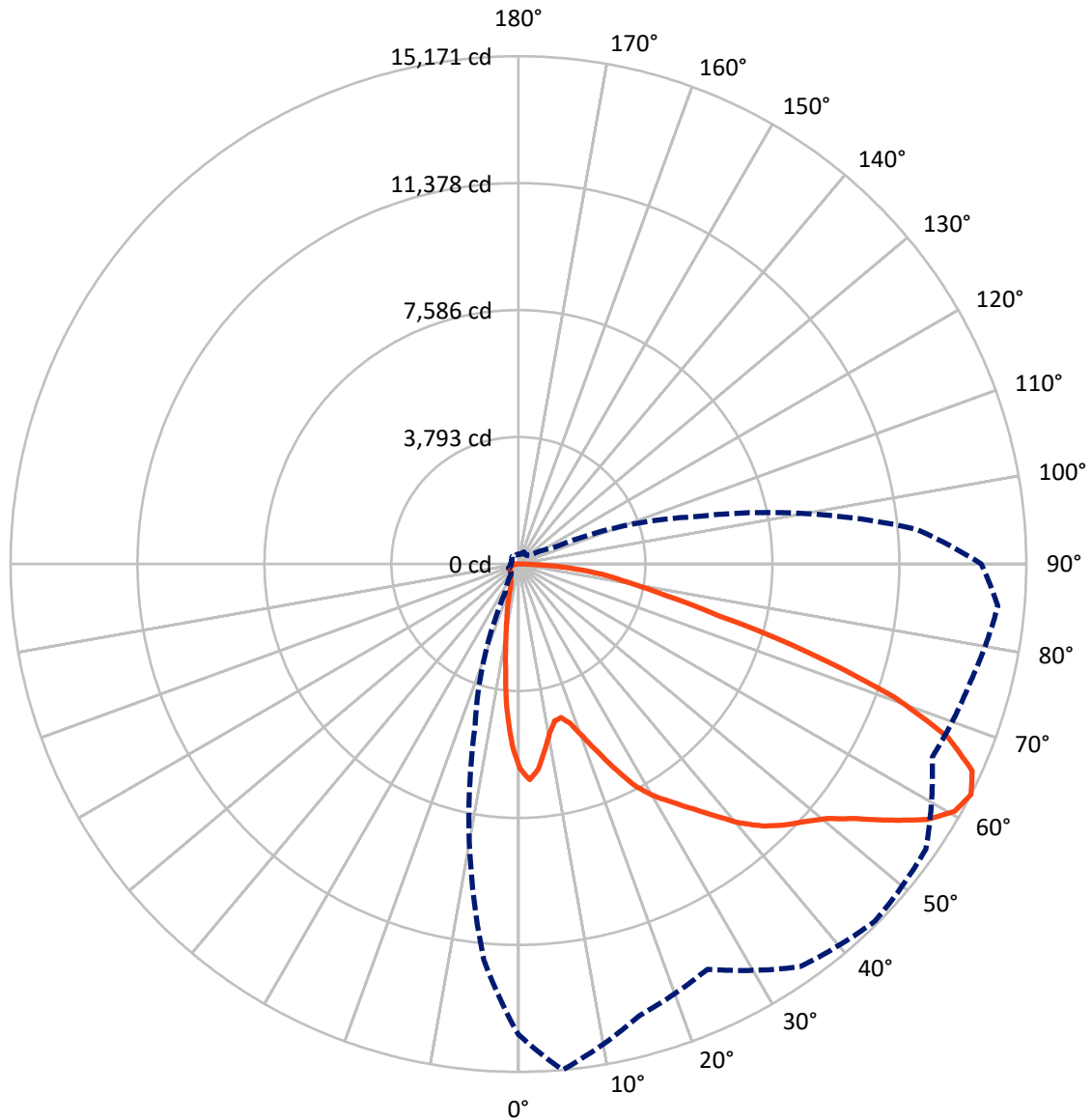
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 11.2 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
<b>House Side</b>	Lumens	3180.4	0.0	3180.4
	% Fixture	17.7	0.0	17.7
<b>Street Side</b>	Lumens	14772.4	0.0	14772.4
	% Fixture	82.3	0.0	82.3
<b>Total</b>	Lumens	17952.8	0.0	17952.8
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	445.1	2.5
10°-20°	813.0	4.5
20°-30°	1169.3	6.5
30°-40°	1790.9	10.0
40°-50°	2618.3	14.6
50°-60°	3809.7	21.2
60°-70°	4414.0	24.6
70°-80°	2301.0	12.8
80°-90°	591.5	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°	17952.8	100.0
0°-180°	17952.8	100.0



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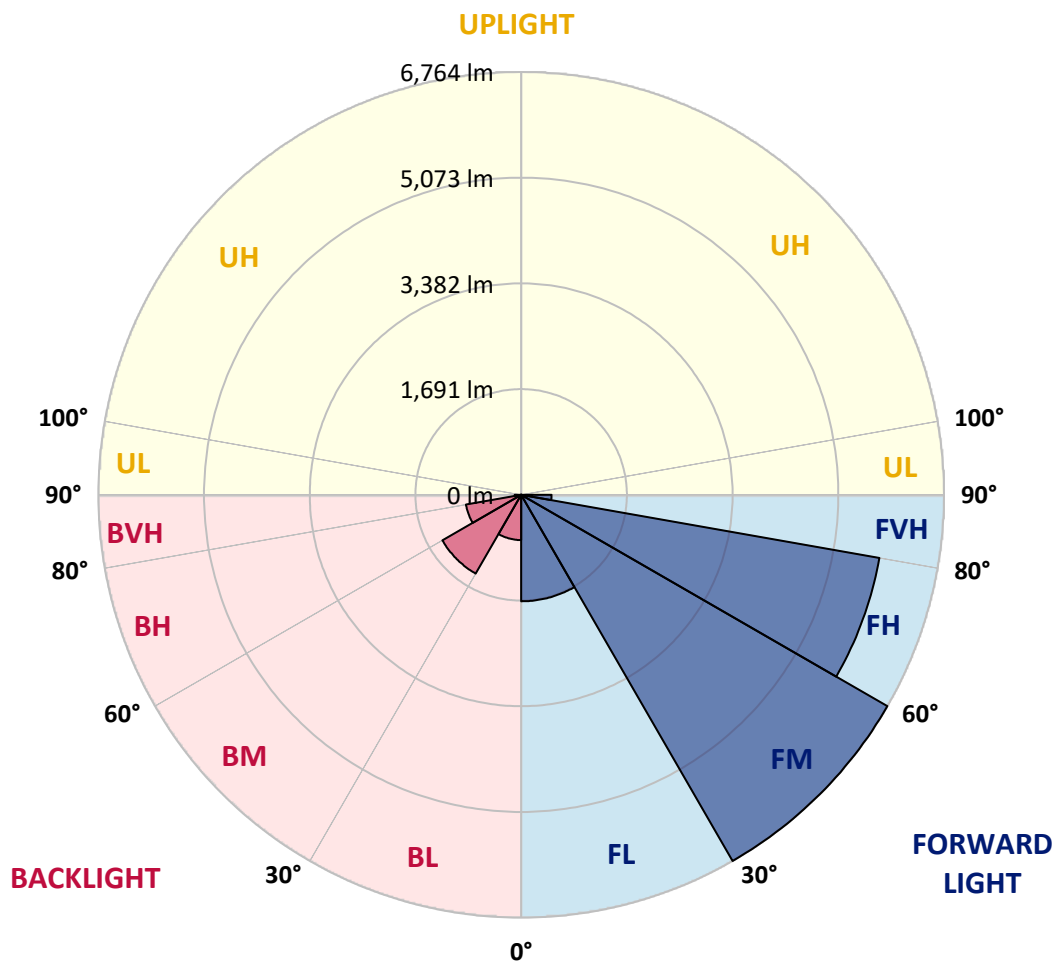
CATALOG NUMBER: NAV-AF-03-D-UNV-SLL-1200

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

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1703.8	9.5			
FM	(30°-60°)	6763.8	37.7			
FH	(60°-80°)	5818.2	32.4			G3/7500
FVH	(80°-90°)	486.6	2.7			G3/500
BL	(0°-30°)	723.6	4.0	B2/1000		
BM	(30°-60°)	1455.1	8.1	B2/2500		
BH	(60°-80°)	896.8	5.0	B2/1000		G2/1000
BVH	(80°-90°)	104.9	0.6			G2/225
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°	6120.4	6120.4	6120.4	6120.4	6120.4	6120.4	6120.4	6120.4	6120.4	6120.4	6120.4
2.5°	6318.4	6452.4	6606.0	6806.4	6943.1	6997.8	7043.3	6966.5	6892.3	6753.1	6703.6
5°	5901.8	6159.5	6582.6	6984.8	7338.9	7541.9	7604.4	7462.5	7210.0	6845.5	6652.9
7.5°	5283.4	5623.3	6218.1	6810.4	7318.0	7656.5	7681.1	7400.0	6902.8	6305.3	5992.9
10°	4743.3	5127.3	5815.9	6478.4	7016.0	7362.3	7294.6	6900.2	6300.0	5620.6	5267.9
12.5°	4429.6	4813.6	5515.1	6188.1	6694.5	6825.9	6688.0	6356.1	5787.2	5106.5	4751.1
15°	4363.2	4758.9	5408.4	5976.0	6289.7	6205.1	6068.3	5900.5	5495.7	4938.5	4594.9
17.5°	4563.7	5006.2	5550.3	5861.4	5848.4	5645.4	5530.8	5563.3	5494.4	5120.8	4761.5
20°	4976.2	5499.6	5910.9	5830.2	5496.9	5211.9	5145.5	5400.7	5719.5	5577.6	5183.3
22.5°	5519.1	6115.3	6403.0	5920.0	5313.4	5006.2	4993.2	5391.6	6129.6	6268.8	5788.6
25°	6132.2	6827.3	6898.9	6078.8	5293.9	4988.0	4976.2	5532.1	6622.9	6953.5	6466.7
27.5°	6881.9	7545.8	7312.8	6290.9	5379.8	5041.4	5049.2	5771.6	7137.0	7630.4	7230.8
30°	7446.9	8056.0	7567.9	6499.2	5517.8	5135.1	5154.6	6030.6	7414.3	8100.3	7841.2
32.5°	7975.3	8492.1	7812.7	6704.9	5719.5	5274.3	5342.1	6353.4	7747.5	8503.8	8418.0
35°	8559.7	8980.3	8084.7	6924.9	6008.5	5519.1	5616.7	6660.6	8078.1	8907.3	8989.4
37.5°	9222.3	9538.6	8380.1	7235.9	6425.1	5972.1	6026.7	6974.4	8308.6	9353.9	9602.4
40°	9912.2	10164.8	8703.0	7651.3	7030.3	6583.8	6609.9	7376.6	8489.5	9815.9	10197.3
42.5°	10504.5	10701.1	9027.1	8166.7	7725.4	7207.4	7229.5	7810.0	8662.7	10214.3	10673.7
45°	10978.3	11122.7	9333.0	8709.5	8467.4	7985.8	7980.6	8251.3	8894.4	10550.1	11039.5
47.5°	11419.6	11496.3	9674.0	9238.0	9236.6	8988.1	8801.9	8772.0	9202.8	10832.5	11358.4
50°	11924.6	11953.3	10124.5	9771.6	10176.5	10137.4	9793.7	9433.2	9602.4	11150.2	11692.9
52.5°	12627.5	12628.8	10682.8	10292.3	11213.9	11337.6	10937.9	10181.6	10193.4	11768.4	12270.9
55°	13454.1	13511.3	11410.5	10915.8	12299.6	12510.4	12134.1	11070.7	11042.0	12765.5	13208.0
57.5°	14093.2	14396.5	12257.8	11695.5	13313.5	13588.2	13284.9	11992.3	12084.7	13793.8	13981.3
60°	14272.8	14982.2	13102.7	12570.2	14171.3	14583.9	14275.5	12988.1	13105.2	14461.6	14203.9
62.5°	14058.1	15171.0	13963.1	13353.8	14680.3	15075.9	14854.7	13640.2	13937.0	14375.6	13827.6
65°	13421.5	14897.6	14710.2	13687.1	14387.4	14527.9	14469.4	13674.1	14388.7	13563.4	12787.6
67.5°	11935.1	13843.3	14377.0	12975.1	13019.3	12868.3	12791.5	12744.6	13881.0	12252.6	11147.5
70°	9706.6	11894.7	12787.6	10858.5	10530.6	10384.7	10132.2	10757.0	12476.5	10439.4	9174.2
72.5°	7476.8	9100.0	10488.8	8231.8	7549.7	7599.2	7312.8	8225.2	10335.3	8070.4	7004.3
75°	5309.5	6205.1	8372.3	5914.8	5011.4	5008.9	4986.7	5920.0	8155.0	5792.5	5124.7
77.5°	3827.0	4467.3	6559.2	3958.4	3556.2	3601.7	3528.9	4023.5	6357.3	4166.7	3797.0
80°	3052.4	3307.5	4239.5	2639.8	2647.6	2754.3	2738.7	2751.7	4182.2	3017.3	2839.0
82.5°	2193.3	2510.9	3241.1	2022.8	1750.8	1864.0	1886.1	2041.0	2950.9	2133.5	1871.8
85°	1124.6	1530.7	2982.1	1752.0	1094.7	907.3	1043.9	1610.1	2563.0	1278.3	912.5
87.5°	218.7	424.3	2185.5	973.6	492.0	248.6	410.0	682.1	1490.4	231.7	113.2
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):**

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°	185°
0°	6120.4	6120.4	6120.4	6120.4	6120.4	6120.4	6120.4	6120.4	6120.4	6120.4	6120.4
2.5°	6619.0	6452.4	6296.2	6134.7	6009.8	5857.5	5707.9	5577.6	5451.4	5368.1	5394.1
5°	6457.6	6051.5	5687.0	5348.6	5150.8	4912.5	4700.4	4522.1	4384.1	4295.5	4348.9
7.5°	5722.2	5172.9	4692.5	4246.1	3964.9	3656.4	3409.1	3234.7	3127.9	3068.0	3155.3
10°	4969.8	4352.8	3813.9	3349.2	3071.9	2810.4	2586.4	2401.6	2258.4	2190.8	2225.8
12.5°	4430.9	3744.9	3179.9	2867.5	2629.4	2395.0	2163.3	1947.3	1765.1	1681.7	1664.9
15°	4229.1	3418.2	2841.6	2492.7	2255.8	2000.7	1750.8	1519.1	1345.9	1274.3	1258.7
17.5°	4317.7	3347.9	2641.1	2228.5	1884.8	1575.0	1293.8	1075.2	947.7	907.3	911.1
20°	4628.8	3373.9	2479.7	1956.4	1532.1	1165.0	883.8	732.8	678.2	669.0	679.4
22.5°	5055.7	3480.7	2362.5	1722.1	1221.0	847.4	657.3	585.7	571.4	570.1	580.5
25°	5619.3	3689.0	2284.5	1513.9	964.5	671.7	572.8	532.3	520.7	523.2	533.7
27.5°	6283.2	3953.2	2233.7	1334.2	792.7	598.7	535.0	499.8	488.2	490.7	498.6
30°	6889.8	4184.9	2158.2	1198.8	712.0	572.8	514.1	479.0	463.4	463.4	468.6
32.5°	7432.6	4385.3	2069.6	1097.3	637.8	514.1	466.0	438.6	427.0	430.9	433.4
35°	7914.2	4490.8	2000.7	1037.5	578.0	473.8	425.6	397.0	381.4	384.0	387.9
37.5°	8388.0	4531.2	1955.1	1004.8	535.0	449.1	404.8	381.4	364.5	361.8	360.6
40°	8838.4	4522.1	1912.2	995.7	506.4	430.9	391.8	371.0	354.0	350.2	348.8
42.5°	9227.5	4492.1	1871.8	971.1	486.8	417.9	381.4	363.1	346.3	341.1	338.4
45°	9582.9	4473.9	1827.5	925.5	497.3	412.7	376.1	356.7	341.1	334.5	331.9
47.5°	9977.4	4538.9	1778.1	876.1	494.6	413.9	376.1	354.0	338.4	331.9	329.3
50°	10447.2	4758.9	1716.9	808.3	471.2	442.5	374.9	350.2	335.8	331.9	326.7
52.5°	11111.1	5115.6	1632.3	721.1	453.0	472.5	373.6	343.6	331.9	325.4	319.0
55°	12020.9	5472.3	1523.0	628.7	424.3	451.6	376.1	335.8	322.8	316.3	308.5
57.5°	12766.8	5742.9	1385.0	551.9	398.3	427.0	372.3	326.7	312.4	305.9	299.4
60°	12718.7	5769.0	1253.5	502.5	382.7	384.0	381.4	320.2	303.3	298.1	292.9
62.5°	11931.1	5447.5	1131.2	477.7	371.0	350.2	389.2	312.4	294.2	289.0	285.1
65°	10620.4	4699.0	1066.1	477.7	360.6	331.9	339.7	302.0	285.1	279.9	277.2
67.5°	8958.1	3776.1	1004.8	488.2	346.3	319.0	308.5	291.5	276.0	270.8	268.1
70°	7180.0	2971.7	962.0	482.9	333.3	304.6	291.5	277.2	261.7	260.3	257.7
72.5°	5632.4	2387.3	942.4	482.9	313.7	287.7	274.7	264.2	248.6	247.3	243.5
75°	4512.8	1792.4	861.7	473.8	294.2	265.6	253.8	244.7	229.1	230.4	227.8
77.5°	3495.0	1267.8	719.9	427.0	269.4	240.8	231.7	225.2	206.9	208.3	208.3
80°	2733.5	825.2	558.4	354.0	240.8	212.2	205.6	200.5	181.0	183.5	183.5
82.5°	1873.1	490.7	404.8	285.1	206.9	181.0	179.6	171.9	151.0	152.3	154.9
85°	1023.2	322.8	269.4	210.8	162.8	147.1	144.4	140.6	121.0	121.0	122.3
87.5°	188.7	173.1	158.8	139.3	109.4	105.5	101.6	105.5	91.1	88.5	88.5
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°	6120.4	6120.4	6120.4	6120.4	6120.4	6120.4	6120.4	6120.4	6120.4	6120.4	6120.4
2.5°	5332.9	5243.1	5180.6	5126.0	4994.6	5003.7	5021.9	5047.9	4965.9	5008.9	5062.2
5°	4295.5	4221.3	4165.4	4078.1	3894.6	3829.5	3787.9	3769.7	3647.3	3673.3	3730.6
7.5°	3167.0	3165.6	3146.2	3048.5	2827.2	2693.1	2604.6	2577.3	2501.8	2530.5	2617.6
10°	2229.7	2253.2	2244.0	2156.9	1959.1	1862.7	1843.2	1897.9	1899.1	1955.1	2104.8
12.5°	1611.5	1598.5	1586.7	1515.2	1366.8	1351.1	1395.4	1470.9	1489.1	1549.0	1705.2
15°	1202.8	1171.5	1165.0	1109.0	1011.4	1025.7	1058.2	1097.3	1098.6	1140.3	1269.2
17.5°	902.0	902.0	912.5	876.1	805.8	799.2	782.4	771.9	756.3	773.1	843.5
20°	700.3	732.8	758.8	738.1	674.2	643.0	610.5	589.6	578.0	579.2	600.1
22.5°	600.1	626.1	659.9	649.6	596.2	555.8	535.0	520.7	511.6	511.6	523.2
25°	549.3	566.2	597.5	592.3	546.7	514.1	497.3	482.9	472.5	471.2	482.9
27.5°	508.9	519.4	540.2	537.6	490.7	469.9	459.5	450.4	443.9	442.5	454.3
30°	472.5	477.7	488.2	484.3	449.1	428.2	424.3	420.4	416.5	417.9	434.8
32.5°	440.0	443.9	450.4	445.2	411.3	393.1	386.6	381.4	377.5	381.4	400.9
35°	403.6	415.2	423.1	420.4	384.0	361.8	347.5	334.5	329.3	333.3	355.4
37.5°	372.3	391.8	402.2	399.6	361.8	335.8	317.6	315.0	315.0	320.2	342.4
40°	360.6	374.9	384.0	380.1	342.4	316.3	305.9	302.0	303.3	308.5	331.9
42.5°	350.2	363.1	365.8	357.9	320.2	303.3	296.8	291.5	294.2	300.6	324.1
45°	341.1	351.5	350.2	338.4	302.0	290.3	290.3	286.3	287.7	292.9	317.6
47.5°	334.5	339.7	337.2	325.4	289.0	279.9	283.8	283.8	286.3	290.3	315.0
50°	324.1	328.1	325.4	315.0	278.5	270.8	274.7	279.9	282.4	286.3	308.5
52.5°	313.7	316.3	315.0	304.6	268.1	262.9	262.9	268.1	273.3	278.5	298.1
55°	303.3	305.9	307.2	299.4	260.3	255.1	253.8	253.8	259.0	266.9	287.7
57.5°	295.5	295.5	298.1	292.9	252.6	246.0	239.5	240.8	247.3	253.8	274.7
60°	286.3	287.7	291.5	286.3	242.1	231.7	226.5	233.0	235.6	242.1	264.2
62.5°	278.5	278.5	281.2	277.2	233.0	222.6	218.7	225.2	225.2	231.7	253.8
65°	272.0	270.8	270.8	269.4	223.9	213.5	210.8	213.5	214.8	221.3	243.5
67.5°	266.9	260.3	260.3	262.9	214.8	204.4	203.1	203.1	204.4	212.2	231.7
70°	255.1	249.9	248.6	257.7	205.6	192.6	192.6	190.1	192.6	196.5	217.4
72.5°	242.1	238.2	236.9	249.9	196.5	179.6	177.1	175.7	177.1	181.0	200.5
75°	225.2	222.6	225.2	244.7	187.4	165.3	161.4	160.1	160.1	161.4	182.2
77.5°	205.6	203.1	222.6	227.8	182.2	148.4	144.4	141.9	139.3	139.3	162.8
80°	182.2	181.0	214.8	192.6	174.4	130.1	123.7	119.8	117.1	115.8	139.3
82.5°	158.8	156.2	183.5	151.0	144.4	106.7	97.6	89.8	85.9	85.9	106.7
85°	130.1	128.9	144.4	110.7	100.2	78.1	65.1	58.6	53.4	53.4	68.9
87.5°	95.0	92.4	89.8	66.4	50.7	35.2	24.8	23.4	20.9	19.5	28.6
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-1200

**CANDELA DISTRIBUTION (continued):**

	295°	305°	315°	325°	335°	345°	355°	360°
0°	6120.4	6120.4	6120.4	6120.4	6120.4	6120.4	6120.4	6120.4
2.5°	5141.6	5249.7	5454.0	5621.9	5845.9	6025.5	6229.8	6318.4
5°	3836.1	4006.6	4318.9	4585.8	4955.5	5297.8	5688.3	5901.8
7.5°	2751.7	3004.3	3241.1	3574.4	4036.5	4496.0	5001.0	5283.4
10°	2276.6	2508.3	2711.4	2948.2	3304.9	3821.7	4424.4	4743.3
12.5°	1886.1	2136.0	2350.8	2604.6	2904.1	3371.3	4058.7	4429.6
15°	1446.1	1718.3	1975.9	2281.8	2648.9	3182.6	3949.3	4363.2
17.5°	990.5	1282.2	1599.8	1973.4	2415.9	3103.2	4053.4	4563.7
20°	673.0	886.5	1231.4	1674.0	2206.3	3065.5	4282.5	4976.2
22.5°	553.2	649.6	908.6	1392.7	2034.5	3107.1	4654.7	5519.1
25°	507.7	559.8	706.9	1145.5	1903.0	3217.7	5158.5	6132.2
27.5°	479.0	523.2	619.6	968.4	1782.0	3368.7	5771.6	6881.9
30°	462.1	503.7	584.4	877.3	1671.3	3498.9	6298.8	7446.9
32.5°	424.3	455.6	522.0	825.2	1591.9	3604.4	6763.4	7975.3
35°	378.8	416.5	471.2	791.5	1589.4	3653.8	7200.9	8559.7
37.5°	361.8	398.3	438.6	773.1	1605.0	3695.4	7735.9	9222.3
40°	351.5	384.0	416.5	770.6	1618.0	3727.9	8259.1	9912.2
42.5°	342.4	374.9	412.7	752.4	1612.8	3772.2	8722.5	10504.5
45°	339.7	372.3	421.8	725.1	1611.5	3841.3	9090.9	10978.3
47.5°	337.2	386.6	419.1	695.1	1606.2	3987.1	9506.1	11419.6
50°	334.5	412.7	400.9	653.5	1567.3	4235.6	10064.5	11924.6
52.5°	333.3	416.5	381.4	596.2	1496.9	4604.0	10881.9	12627.5
55°	328.1	395.7	347.5	520.7	1395.4	5001.0	11758.0	13454.1
57.5°	316.3	352.7	328.1	446.5	1249.6	5278.3	12404.9	14093.2
60°	344.9	303.3	315.0	408.8	1075.2	5327.7	12433.6	14272.8
62.5°	329.3	276.0	302.0	395.7	952.8	5004.9	11864.7	14058.1
65°	262.9	261.7	290.3	408.8	934.6	4282.5	10904.1	13421.5
67.5°	239.5	251.2	278.5	424.3	946.3	3373.9	9490.5	11935.1
70°	223.9	238.2	262.9	438.6	967.1	2658.0	7640.8	9706.6
72.5°	208.3	219.9	247.3	453.0	952.8	2096.9	6115.3	7476.8
75°	188.7	199.2	225.2	415.2	817.4	1541.2	4859.1	5309.5
77.5°	166.6	175.7	197.8	328.1	614.4	1072.6	3639.5	3827.0
80°	143.2	147.1	164.0	239.5	400.9	641.7	2769.9	3052.4
82.5°	113.2	114.6	125.0	175.7	249.9	410.0	1921.3	2193.3
85°	72.9	75.5	80.7	123.7	167.9	262.9	981.4	1124.6
87.5°	24.8	28.6	28.6	59.8	82.0	145.8	300.6	218.7
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)