

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: P196223

Luminaire Tested: **NAV-AF-05-D-UNV-SLL-1200**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196223  
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-05-D-UNV-SLL-1200  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(5) 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: 29802.7 lumens  
Efficiency: N/A  
Efficacy: 93.1 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

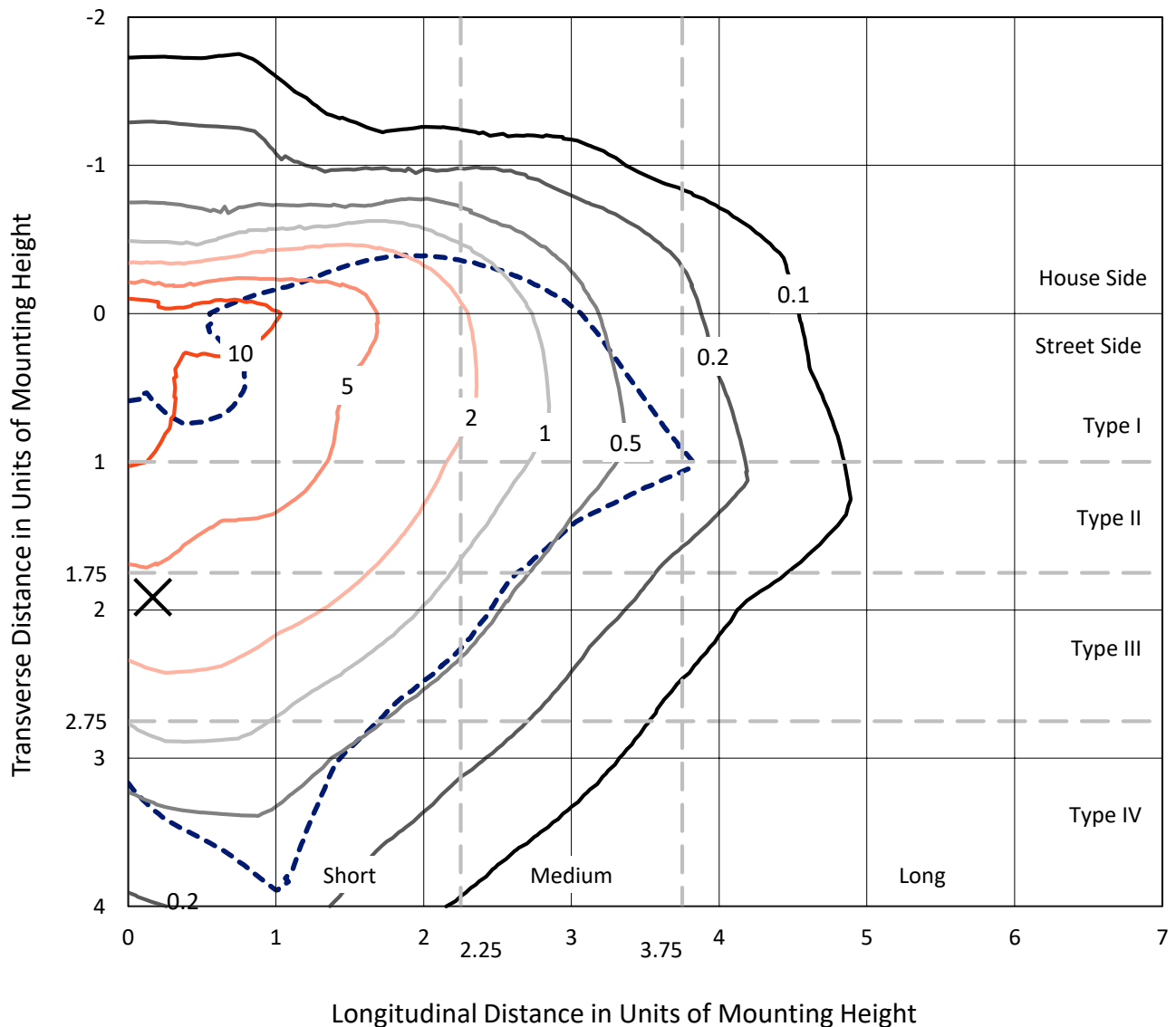
Input Watts (W): 320  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

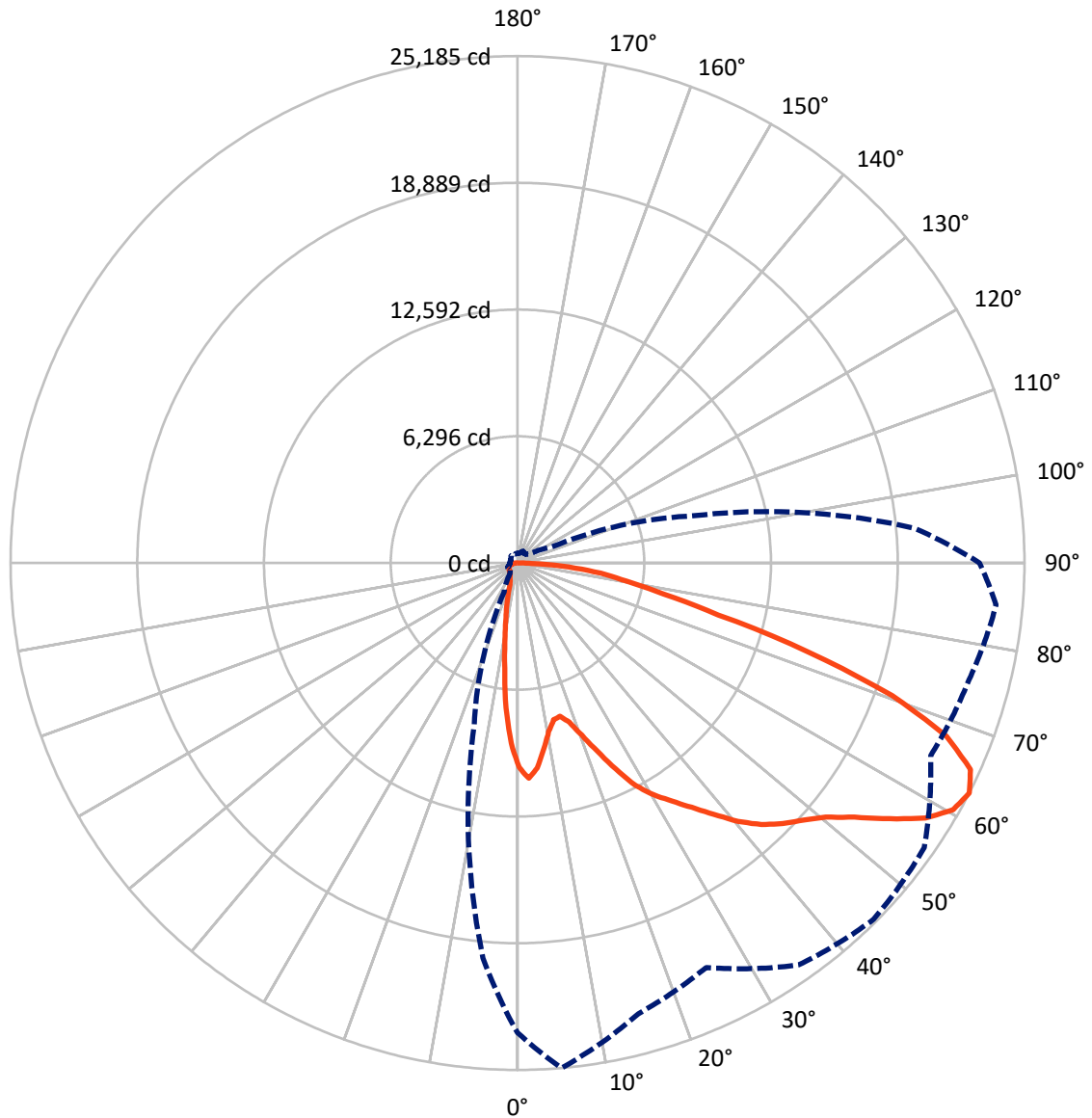
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 18.7 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	5279.6	0.0	5279.6
	% Fixture	17.7	0.0	17.7
<b>Street Side</b>	Lumens	24523.1	0.0	24523.1
	% Fixture	82.3	0.0	82.3
<b>Total</b>	Lumens	29802.7	0.0	29802.7
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	738.9	2.5
10°-20°	1349.6	4.5
20°-30°	1941.1	6.5
30°-40°	2973.0	10.0
40°-50°	4346.6	14.6
50°-60°	6324.3	21.2
60°-70°	7327.6	24.6
70°-80°	3819.7	12.8
80°-90°	981.9	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°	29802.7	100.0
0°-180°	29802.7	100.0



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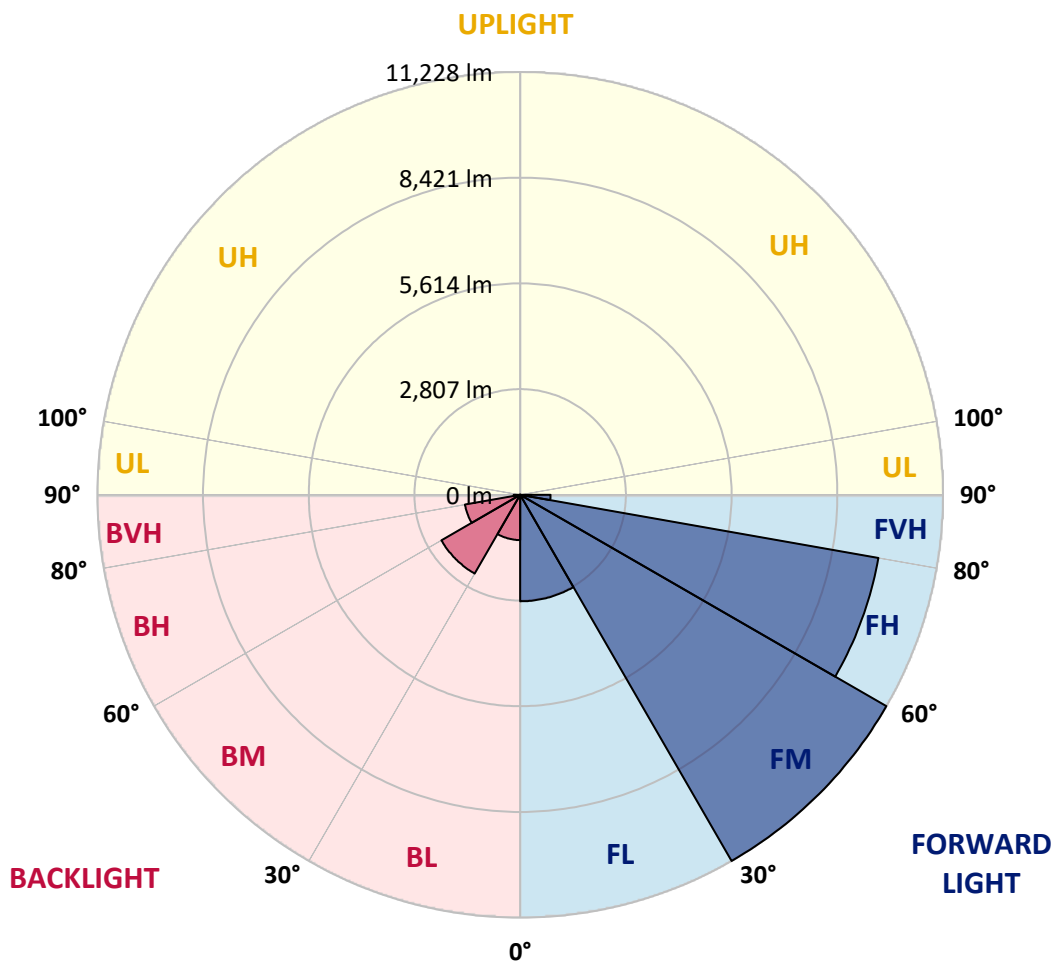
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	2828.4	9.5			
FM	(30°-60°)	11228.3	37.7			
FH	(60°-80°)	9658.6	32.4			G4/12000
FVH	(80°-90°)	807.8	2.7			G5
BL	(0°-30°)	1201.2	4.0	B3/2500		
BM	(30°-60°)	2415.6	8.1	B2/2500		
BH	(60°-80°)	1488.7	5.0	B3/2500		G3/2500
BVH	(80°-90°)	174.1	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°	10160.4	10160.4	10160.4	10160.4	10160.4	10160.4	10160.4	10160.4	10160.4	10160.4	10160.4
2.5°	10488.7	10711.3	10966.3	11299.1	11526.0	11616.7	11692.3	11564.9	11441.7	11210.5	11128.4
5°	9797.3	10225.1	10927.5	11595.1	12182.8	12520.0	12623.7	12388.1	11968.9	11364.0	11044.1
7.5°	8770.9	9334.8	10322.4	11305.6	12148.3	12710.2	12751.2	12284.4	11459.0	10467.1	9948.5
10°	7874.2	8511.6	9654.7	10754.6	11647.0	12221.8	12109.4	11454.7	10458.5	9330.5	8745.0
12.5°	7353.4	7990.8	9155.5	10272.7	11113.2	11331.5	11102.5	10551.4	9607.1	8477.0	7887.1
15°	7243.2	7900.0	8978.3	9920.5	10441.3	10300.8	10073.9	9795.2	9123.1	8198.2	7627.8
17.5°	7576.0	8310.7	9213.8	9730.3	9708.7	9371.6	9181.5	9235.5	9120.9	8500.8	7904.3
20°	8260.9	9129.6	9812.5	9678.4	9125.2	8652.0	8541.8	8965.3	9494.8	9259.2	8604.6
22.5°	9162.0	10151.7	10629.2	9827.6	8820.6	8310.7	8289.0	8950.2	10175.4	10406.7	9609.3
25°	10179.8	11333.7	11452.5	10091.2	8788.2	8280.4	8260.9	9183.6	10994.4	11543.3	10735.2
27.5°	11424.4	12526.4	12139.7	10443.4	8930.8	8369.0	8382.0	9581.2	11847.9	12666.9	12003.5
30°	12362.3	13373.5	12563.2	10789.2	9159.8	8524.6	8557.0	10011.2	12308.2	13447.0	13016.9
32.5°	13239.5	14097.4	12969.4	11130.5	9494.8	8755.7	8868.2	10547.1	12861.4	14116.8	13974.2
35°	14209.7	14907.7	13421.0	11495.7	9974.5	9162.0	9324.1	11057.1	13410.3	14786.7	14922.8
37.5°	15309.6	15834.7	13911.5	12012.2	10666.0	9914.0	10004.8	11577.9	13792.8	15527.9	15940.5
40°	16454.9	16874.1	14447.4	12701.5	11670.7	10929.6	10972.8	12245.5	14093.1	16295.0	16928.1
42.5°	17438.0	17764.4	14985.5	13557.2	12824.6	11964.6	12001.4	12965.1	14380.4	16956.2	17718.9
45°	18224.6	18464.5	15493.3	14458.3	14056.4	13256.8	13248.1	13697.6	14765.1	17513.7	18326.2
47.5°	18957.1	19084.6	16059.4	15335.6	15333.4	14920.7	14611.6	14562.0	15277.3	17982.6	18855.5
50°	19795.5	19843.1	16807.1	16221.5	16893.5	16828.7	16258.3	15659.6	15940.5	18509.9	19410.9
52.5°	20962.4	20964.6	17734.1	17085.8	18615.8	18821.0	18157.6	16902.2	16921.7	19536.2	20370.3
55°	22334.6	22429.6	18942.0	18120.9	20417.9	20767.9	20143.4	18378.0	18330.5	21191.4	21926.1
57.5°	23395.5	23899.0	20348.7	19415.2	22101.2	22557.1	22053.6	19908.0	20061.3	22898.5	23209.7
60°	23693.7	24871.4	21751.1	20867.4	23525.2	24210.2	23698.1	21560.9	21755.4	24007.0	23579.2
62.5°	23337.2	25184.7	23179.5	22168.2	24370.1	25027.0	24659.7	22643.5	23136.2	23864.4	22954.7
65°	22280.5	24731.0	24419.8	22721.4	23883.9	24117.3	24020.0	22699.7	23886.0	22516.1	21228.2
67.5°	19812.8	22980.6	23866.6	21539.4	21612.8	21362.2	21234.7	21156.9	23043.3	20340.0	18505.5
70°	16113.4	19745.8	21228.2	18025.8	17481.3	17239.3	16820.1	17857.2	20711.8	17330.0	15229.7
72.5°	12411.9	15106.5	17412.2	13665.2	12532.9	12615.0	12139.7	13654.4	17157.1	13397.3	11627.6
75°	8814.2	10300.8	13898.6	9818.9	8319.2	8315.0	8278.2	9827.6	13537.7	9615.7	8507.3
77.5°	6352.9	7416.1	10888.5	6571.1	5903.4	5979.0	5858.0	6679.2	10553.6	6916.9	6303.2
80°	5067.2	5490.7	7037.9	4382.2	4395.2	4572.4	4546.4	4568.0	6942.8	5008.9	4712.8
82.5°	3641.0	4168.3	5380.5	3357.9	2906.3	3094.3	3131.0	3388.2	4898.6	3541.7	3107.3
85°	1867.0	2541.1	4950.5	2908.5	1817.3	1506.1	1733.0	2673.0	4254.8	2121.9	1514.8
87.5°	363.0	704.4	3628.1	1616.4	816.8	412.8	680.7	1132.3	2474.2	384.6	188.0
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):**

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°	185°
0°	10160.4	10160.4	10160.4	10160.4	10160.4	10160.4	10160.4	10160.4	10160.4	10160.4	10160.4
2.5°	10987.9	10711.3	10452.0	10184.1	9976.6	9723.9	9475.3	9259.2	9049.6	8911.3	8954.6
5°	10720.0	10045.8	9440.7	8878.9	8550.4	8155.1	7802.9	7506.8	7277.8	7130.8	7219.4
7.5°	9499.1	8587.3	7789.9	7048.6	6582.0	6069.8	5659.3	5369.7	5192.5	5093.2	5237.9
10°	8250.1	7225.9	6331.2	5559.8	5099.6	4665.3	4293.6	3986.7	3749.1	3636.7	3695.1
12.5°	7355.5	6216.8	5278.9	4760.3	4364.9	3976.0	3591.4	3232.6	2930.1	2791.8	2763.7
15°	7020.6	5674.4	4717.1	4138.0	3744.7	3321.2	2906.3	2521.7	2234.3	2115.5	2089.6
17.5°	7167.5	5557.7	4384.4	3699.4	3128.9	2614.7	2147.9	1784.8	1573.1	1506.1	1512.6
20°	7684.0	5601.0	4116.5	3247.8	2543.4	1934.0	1467.2	1216.6	1125.8	1110.7	1128.0
22.5°	8392.7	5778.1	3922.0	2858.8	2026.9	1406.8	1091.2	972.4	948.6	946.4	963.7
25°	9328.4	6123.9	3792.3	2513.1	1601.2	1115.0	950.7	883.8	864.3	868.7	886.0
27.5°	10430.4	6562.5	3708.0	2214.9	1315.9	994.0	888.1	829.7	810.3	814.7	827.6
30°	11437.4	6947.2	3582.7	1990.2	1182.0	950.7	853.6	795.2	769.3	769.3	778.0
32.5°	12338.4	7279.9	3435.8	1821.6	1058.9	853.6	773.6	728.2	708.8	715.2	719.5
35°	13138.0	7455.0	3321.2	1722.2	959.4	786.5	706.6	659.1	633.1	637.4	643.9
37.5°	13924.5	7522.0	3245.6	1668.1	888.1	745.5	672.0	633.1	605.1	600.7	598.5
40°	14672.2	7506.8	3174.3	1653.1	840.6	715.2	650.4	615.8	587.8	581.2	579.1
42.5°	15318.3	7457.1	3107.3	1612.0	808.1	693.7	633.1	602.9	574.8	566.1	561.8
45°	15908.2	7426.8	3033.9	1536.4	825.4	685.0	624.5	592.1	566.1	555.4	551.1
47.5°	16562.9	7534.9	2951.7	1454.2	821.1	687.1	624.5	587.8	561.8	551.1	546.7
50°	17343.0	7900.0	2850.1	1341.9	782.3	734.7	622.4	581.2	557.5	551.1	542.4
52.5°	18445.0	8492.1	2709.7	1197.2	752.0	784.4	620.2	570.5	551.1	540.2	529.4
55°	19955.4	9084.2	2528.2	1043.7	704.4	749.8	624.5	557.5	535.9	525.1	512.1
57.5°	21193.6	9533.7	2299.2	916.2	661.2	708.8	618.0	542.4	518.6	507.8	496.9
60°	21113.7	9576.9	2080.9	834.1	635.3	637.4	633.1	531.5	503.5	494.8	486.2
62.5°	19806.4	9043.2	1877.7	793.0	615.8	581.2	646.1	518.6	488.4	479.7	473.2
65°	17630.4	7800.7	1769.7	793.0	598.5	551.1	564.0	501.3	473.2	464.6	460.2
67.5°	14870.9	6268.6	1668.1	810.3	574.8	529.4	512.1	484.1	458.1	449.5	445.1
70°	11919.2	4933.2	1596.8	801.7	553.2	505.6	484.1	460.2	434.3	432.2	427.8
72.5°	9350.0	3963.0	1564.5	801.7	520.8	477.5	455.9	438.6	412.8	410.6	404.1
75°	7491.7	2975.5	1430.5	786.5	488.4	440.8	421.4	406.2	380.3	382.5	378.2
77.5°	5801.9	2104.6	1194.9	708.8	447.3	399.8	384.6	373.8	343.6	345.8	345.8
80°	4537.8	1369.9	927.0	587.8	399.8	352.2	341.5	332.8	300.3	304.6	304.6
82.5°	3109.5	814.7	672.0	473.2	343.6	300.3	298.2	285.2	250.6	252.8	257.2
85°	1698.4	535.9	447.3	350.1	270.1	244.2	239.9	233.3	201.0	201.0	203.2
87.5°	313.3	287.3	263.6	231.2	181.5	175.0	168.6	175.0	151.3	146.9	146.9
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):**

	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°	285°
0°	10160.4	10160.4	10160.4	10160.4	10160.4	10160.4	10160.4	10160.4	10160.4	10160.4	10160.4
2.5°	8853.0	8703.9	8600.2	8509.4	8291.2	8306.3	8336.5	8379.8	8243.7	8315.0	8403.5
5°	7130.8	7007.6	6914.7	6770.0	6465.3	6357.2	6288.1	6257.8	6054.7	6097.9	6193.0
7.5°	5257.4	5255.2	5222.8	5060.7	4693.4	4470.8	4323.9	4278.5	4153.2	4200.6	4345.5
10°	3701.5	3740.4	3725.3	3580.5	3252.1	3092.2	3059.7	3150.5	3152.6	3245.6	3494.1
12.5°	2675.1	2653.5	2634.1	2515.2	2268.9	2242.9	2316.5	2441.8	2472.1	2571.4	2830.7
15°	1996.6	1944.7	1934.0	1841.0	1679.0	1702.7	1756.8	1821.6	1823.7	1892.9	2106.9
17.5°	1497.5	1497.5	1514.8	1454.2	1337.6	1326.8	1298.6	1281.3	1255.5	1283.5	1400.2
20°	1162.6	1216.6	1259.8	1225.2	1119.3	1067.4	1013.4	978.9	959.4	961.6	996.1
22.5°	996.1	1039.3	1095.6	1078.3	989.7	922.7	888.1	864.3	849.3	849.3	868.7
25°	911.9	940.0	991.9	983.2	907.6	853.6	825.4	801.7	784.4	782.3	801.7
27.5°	844.9	862.1	896.7	892.4	814.7	780.1	762.8	747.7	736.8	734.7	754.1
30°	784.4	793.0	810.3	803.8	745.5	711.0	704.4	698.0	691.5	693.7	721.7
32.5°	730.4	736.8	747.7	739.0	682.8	652.5	641.8	633.1	626.7	633.1	665.5
35°	669.8	689.3	702.3	698.0	637.4	600.7	576.9	555.4	546.7	553.2	589.9
37.5°	618.0	650.4	667.7	663.4	600.7	557.5	527.2	522.9	522.9	531.5	568.4
40°	598.5	622.4	637.4	631.0	568.4	525.1	507.8	501.3	503.5	512.1	551.1
42.5°	581.2	602.9	607.2	594.2	531.5	503.5	492.7	484.1	488.4	499.2	538.1
45°	566.1	583.4	581.2	561.8	501.3	481.9	481.9	475.4	477.5	486.2	527.2
47.5°	555.4	564.0	559.7	540.2	479.7	464.6	471.1	471.1	475.4	481.9	522.9
50°	538.1	544.5	540.2	522.9	462.4	449.5	455.9	464.6	468.9	475.4	512.1
52.5°	520.8	525.1	522.9	505.6	445.1	436.5	436.5	445.1	453.8	462.4	494.8
55°	503.5	507.8	509.9	496.9	432.2	423.5	421.4	421.4	430.0	442.9	477.5
57.5°	490.5	490.5	494.8	486.2	419.2	408.4	397.6	399.8	410.6	421.4	455.9
60°	475.4	477.5	484.1	475.4	401.9	384.6	376.0	386.8	391.1	401.9	438.6
62.5°	462.4	462.4	466.8	460.2	386.8	369.5	363.0	373.8	373.8	384.6	421.4
65°	451.6	449.5	449.5	447.3	371.6	354.4	350.1	354.4	356.5	367.3	404.1
67.5°	442.9	432.2	432.2	436.5	356.5	339.2	337.1	337.1	339.2	352.2	384.6
70°	423.5	414.9	412.8	427.8	341.5	319.8	319.8	315.5	319.8	326.3	360.9
72.5°	401.9	395.5	393.3	414.9	326.3	298.2	293.9	291.7	293.9	300.3	332.8
75°	373.8	369.5	373.8	406.2	311.2	274.5	267.9	265.8	265.8	267.9	302.5
77.5°	341.5	337.1	369.5	378.2	302.5	246.3	239.9	235.5	231.2	231.2	270.1
80°	302.5	300.3	356.5	319.8	289.6	216.0	205.3	198.8	194.5	192.3	231.2
82.5°	263.6	259.3	304.6	250.6	239.9	177.2	162.0	149.1	142.6	142.6	177.2
85°	216.0	213.9	239.9	183.7	166.4	129.6	108.0	97.3	88.6	88.6	114.6
87.5°	157.7	153.4	149.1	110.2	84.3	58.3	41.0	38.9	34.6	32.4	47.6
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-05-D-UNV-SLL-1200

**CANDELA DISTRIBUTION (continued):**

	295°	305°	315°	325°	335°	345°	355°	360°
0°	10160.4	10160.4	10160.4	10160.4	10160.4	10160.4	10160.4	10160.4
2.5°	8535.4	8714.7	9053.9	9332.7	9704.4	10002.6	10341.8	10488.7
5°	6368.1	6651.1	7169.7	7612.7	8226.4	8794.6	9443.0	9797.3
7.5°	4568.0	4987.2	5380.5	5933.7	6700.8	7463.6	8302.0	8770.9
10°	3779.3	4163.9	4501.1	4894.3	5486.4	6344.2	7344.7	7874.2
12.5°	3131.0	3546.0	3902.5	4323.9	4820.9	5596.6	6737.6	7353.4
15°	2400.7	2852.3	3280.2	3788.0	4397.4	5283.2	6556.0	7243.2
17.5°	1644.4	2128.5	2655.7	3275.9	4010.6	5151.5	6728.9	7576.0
20°	1117.2	1471.5	2044.2	2778.8	3662.7	5088.8	7109.2	8260.9
22.5°	918.4	1078.3	1508.2	2312.1	3377.4	5157.9	7727.2	9162.0
25°	842.7	929.1	1173.3	1901.6	3159.2	5341.6	8563.4	10179.8
27.5°	795.2	868.7	1028.6	1607.7	2958.2	5592.3	9581.2	11424.4
30°	767.1	836.3	970.3	1456.4	2774.5	5808.3	10456.4	12362.3
32.5°	704.4	756.3	866.5	1369.9	2642.7	5983.4	11227.8	13239.5
35°	628.8	691.5	782.3	1313.8	2638.4	6065.5	11953.8	14209.7
37.5°	600.7	661.2	728.2	1283.5	2664.4	6134.6	12841.9	15309.6
40°	583.4	637.4	691.5	1279.2	2686.0	6188.6	13710.6	16454.9
42.5°	568.4	622.4	685.0	1248.9	2677.3	6262.1	14479.9	17438.0
45°	564.0	618.0	700.1	1203.6	2675.1	6376.7	15091.4	18224.6
47.5°	559.7	641.8	695.8	1153.9	2666.5	6618.7	15780.7	18957.1
50°	555.4	685.0	665.5	1084.7	2601.7	7031.5	16707.7	19795.5
52.5°	553.2	691.5	633.1	989.7	2485.0	7643.0	18064.7	20962.4
55°	544.5	656.9	576.9	864.3	2316.5	8302.0	19518.9	22334.6
57.5°	525.1	585.6	544.5	741.1	2074.4	8762.3	20592.9	23395.5
60°	572.6	503.5	522.9	678.5	1784.8	8844.3	20640.5	23693.7
62.5°	546.7	458.1	501.3	656.9	1581.8	8308.5	19696.1	23337.2
65°	436.5	434.3	481.9	678.5	1551.5	7109.2	18101.4	22280.5
67.5°	397.6	417.1	462.4	704.4	1570.9	5601.0	15754.8	19812.8
70°	371.6	395.5	436.5	728.2	1605.5	4412.5	12684.2	16113.4
72.5°	345.8	365.2	410.6	752.0	1581.8	3481.1	10151.7	12411.9
75°	313.3	330.6	373.8	689.3	1357.0	2558.4	8066.5	8814.2
77.5°	276.6	291.7	328.5	544.5	1019.9	1780.5	6041.8	6352.9
80°	237.7	244.2	272.3	397.6	665.5	1065.3	4598.3	5067.2
82.5°	188.0	190.2	207.5	291.7	414.9	680.7	3189.5	3641.0
85°	121.0	125.3	134.0	205.3	278.8	436.5	1629.3	1867.0
87.5°	41.0	47.6	47.6	99.4	136.2	242.0	499.2	363.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)