

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: P196241

Luminaire Tested: **NAV-AF-05-D-UNV-SLR**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196241  
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-SLR  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(5) 70 CRI, 4000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND SPILL LIGHT  
ELIMINATOR RIGHT OPTICS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 27167.5 lumens  
Efficiency: N/A  
Efficacy: 97.4 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 - G4

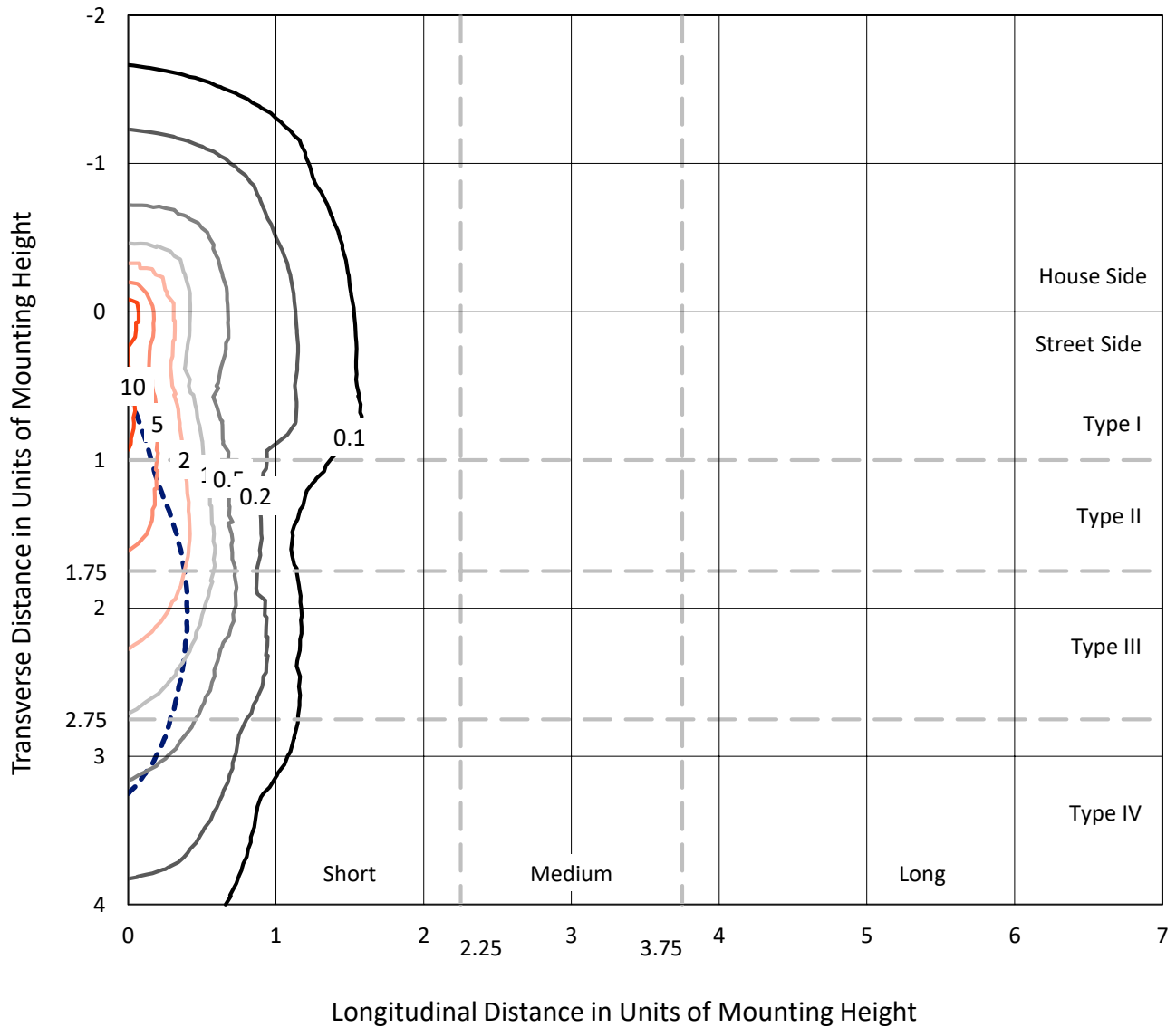
Input Watts (W): 279  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

× Max cd  
 - - - 1/2 Max cd

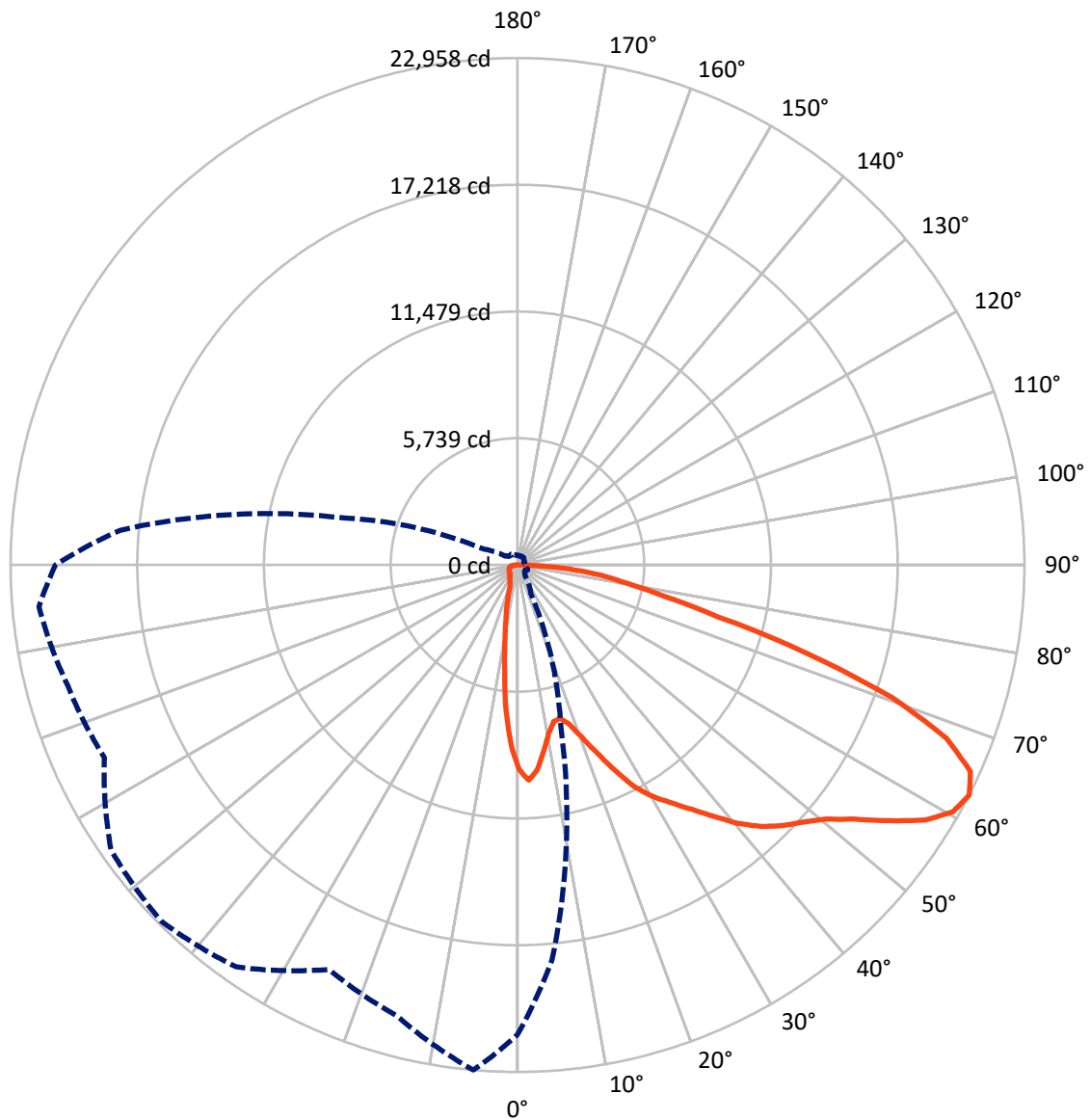


Based on 25 foot mounting height. Maximum calculated value = 14.8 fc  
 Type IV - Short - Non-Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 355-Deg Lateral    - - - Horizontal Cone Through 62.5-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	4812.8	0.0	4812.8
	% Fixture	17.7	0.0	17.7
<b>Street Side</b>	Lumens	22354.8	0.0	22354.8
	% Fixture	82.3	0.0	82.3
<b>Total</b>	Lumens	27167.5	0.0	27167.5
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	673.6	2.5
10°-20°	1230.3	4.5
20°-30°	1769.5	6.5
30°-40°	2710.1	10.0
40°-50°	3962.2	14.6
50°-60°	5765.1	21.2
60°-70°	6679.7	24.6
70°-80°	3482.0	12.8
80°-90°	895.1	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°	27167.5	100.0
0°-180°	27167.5	100.0



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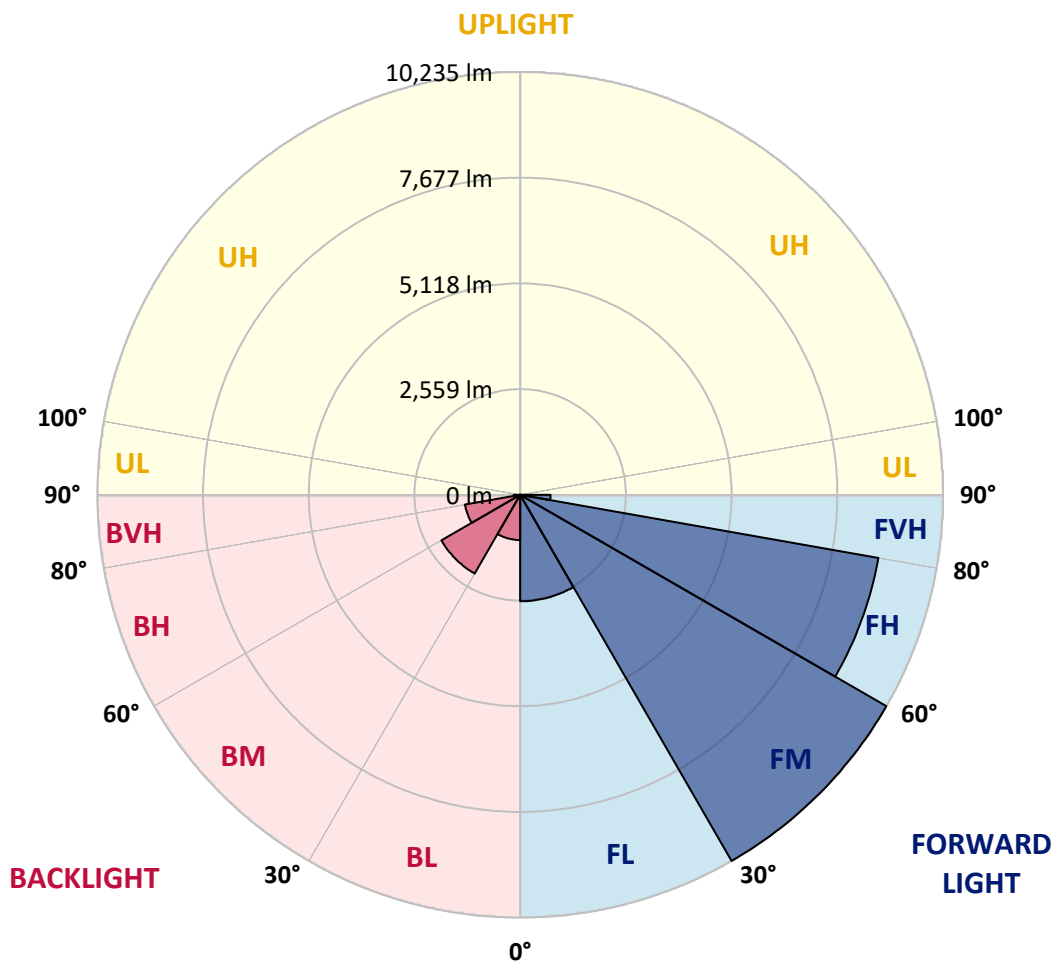
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	2578.3	9.5			
FM	(30°-60°)	10235.5	37.7			
FH	(60°-80°)	8804.6	32.4			G4/12000
FVH	(80°-90°)	736.3	2.7			G4/750
BL	(0°-30°)	1095.0	4.0	B3/2500		
BM	(30°-60°)	2202.0	8.1	B2/2500		
BH	(60°-80°)	1357.1	5.0	B3/2500		G3/2500
BVH	(80°-90°)	158.7	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-G4**

Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	9262.0	9262.0	9262.0	9262.0	9262.0	9262.0	9262.0	9262.0	9262.0	9262.0	9262.0
2.5°	9561.3	9427.4	9118.2	8846.4	8507.5	8253.4	7944.1	7780.7	7660.5	7579.8	7514.7
5°	8931.1	8608.0	8017.1	7498.9	6939.6	6535.7	6063.0	5804.9	5645.5	5558.7	5519.3
7.5°	7995.4	7567.9	6803.6	6108.3	5409.1	4904.7	4546.3	4164.1	3961.3	3829.3	3785.9
10°	7177.9	6695.3	5783.3	5001.3	4461.6	4103.1	3795.8	3445.2	3185.2	2958.6	2873.9
12.5°	6703.2	6141.8	5101.8	4394.6	3941.5	3557.4	3232.4	2854.2	2580.4	2344.1	2253.5
15°	6602.7	5976.4	4816.2	4008.5	3453.1	2990.2	2600.1	2188.4	1920.6	1725.5	1662.5
17.5°	6906.0	6133.9	4696.0	3655.9	2986.2	2420.9	1940.2	1499.0	1276.4	1170.1	1144.5
20°	7530.6	6480.6	4638.9	3338.8	2533.1	1863.4	1341.4	1018.3	908.1	876.6	874.6
22.5°	8351.9	7043.9	4701.9	3078.8	2107.7	1374.9	983.0	837.2	791.9	774.2	774.2
25°	9279.7	7806.2	4869.3	2879.8	1733.4	1069.6	847.0	768.2	730.8	713.1	715.0
27.5°	10414.3	8734.1	5097.8	2696.6	1465.5	937.6	791.9	724.9	687.4	669.7	671.7
30°	11269.1	9531.9	5294.8	2529.2	1327.7	884.4	762.3	699.3	657.9	632.3	630.3
32.5°	12068.9	10235.0	5454.4	2409.0	1248.8	789.9	689.5	642.1	606.7	577.1	571.2
35°	12953.3	10896.9	5529.2	2405.2	1197.7	713.1	630.3	573.2	537.8	504.3	498.4
37.5°	13955.9	11706.4	5592.3	2428.8	1170.1	663.8	602.7	547.6	518.0	484.6	476.7
40°	14999.9	12498.3	5641.5	2448.4	1166.2	630.3	581.1	531.8	502.3	466.9	459.0
42.5°	15896.2	13199.5	5708.5	2440.6	1138.5	624.4	567.3	518.0	490.5	455.0	445.2
45°	16613.2	13757.1	5812.8	2438.6	1097.2	638.2	563.3	514.1	480.6	443.2	435.4
47.5°	17281.0	14385.3	6033.5	2430.7	1051.9	634.2	585.0	510.1	476.7	439.3	433.3
50°	18045.3	15230.4	6409.7	2371.6	988.8	606.7	624.4	506.3	466.9	433.3	427.5
52.5°	19108.9	16467.5	6967.1	2265.2	902.1	577.1	630.3	504.3	451.1	421.6	413.7
55°	20359.8	17793.1	7567.9	2111.6	787.9	525.9	598.8	496.4	435.4	403.8	392.0
57.5°	21326.9	18772.1	7987.5	1891.0	675.7	496.4	533.8	478.6	415.6	384.1	374.3
60°	21598.8	18815.4	8062.4	1627.0	618.5	476.7	459.0	522.0	399.9	366.4	356.5
62.5°	21273.7	17954.6	7573.8	1441.8	598.8	457.0	417.6	498.4	384.1	350.7	340.7
65°	20310.5	16500.9	6480.6	1414.3	618.5	439.3	395.9	397.9	368.4	334.9	325.0
67.5°	18061.0	14361.7	5105.6	1432.0	642.1	421.6	380.1	362.4	350.7	321.1	309.2
70°	14688.8	11562.6	4022.3	1463.5	663.8	397.9	360.5	338.8	329.0	297.5	291.5
72.5°	11314.4	9254.0	3173.3	1441.8	685.5	374.3	332.9	315.2	303.3	273.8	267.9
75°	8034.8	7353.2	2332.2	1237.1	628.4	340.7	301.4	285.6	275.8	244.3	242.2
77.5°	5791.2	5507.6	1623.1	929.8	496.4	299.4	266.0	252.2	246.2	210.7	210.7
80°	4619.1	4191.7	971.1	606.7	362.4	248.2	222.6	216.7	210.7	175.3	177.3
82.5°	3319.1	2907.4	620.5	378.2	266.0	189.1	173.4	171.3	161.5	130.0	130.0
85°	1701.9	1485.2	397.9	254.1	187.1	122.1	114.3	110.3	104.4	80.7	80.7
87.5°	330.9	455.0	220.7	124.1	90.6	43.4	43.4	37.4	43.4	29.6	31.5
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):**

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°	185°
0°	9262.0	9262.0	9262.0	9262.0	9262.0	9262.0	9262.0	9262.0	9262.0	9262.0	9262.0
2.5°	7638.9	7599.4	7571.9	7558.1	7757.0	7839.8	7934.3	8070.3	8162.8	8123.5	8249.5
5°	5704.5	5732.1	5795.1	5893.6	6171.4	6303.3	6388.0	6500.3	6581.1	6500.3	6634.2
7.5°	3900.2	3941.5	4075.5	4278.4	4613.2	4761.0	4790.5	4792.5	4774.7	4642.8	4733.4
10°	2871.9	2789.2	2818.7	2964.5	3263.9	3395.9	3409.7	3374.2	3368.4	3315.2	3417.6
12.5°	2225.8	2111.6	2044.7	2068.3	2292.8	2401.2	2418.9	2438.6	2519.3	2545.0	2671.0
15°	1660.6	1601.4	1552.2	1530.5	1678.3	1763.0	1772.8	1820.1	1904.8	1928.5	2036.8
17.5°	1168.1	1183.9	1209.4	1219.3	1325.6	1380.8	1365.0	1365.0	1378.8	1372.9	1434.0
20°	892.3	923.8	973.0	1020.4	1116.9	1148.4	1109.0	1059.8	1028.3	1012.5	1026.2
22.5°	787.9	809.6	841.1	902.1	983.0	998.7	947.5	908.1	878.5	862.8	864.7
25°	730.8	752.5	778.1	827.4	896.2	904.1	856.8	831.2	807.6	791.9	787.9
27.5°	681.6	695.3	711.1	742.6	813.6	817.4	785.9	770.2	754.4	742.6	738.7
30°	636.3	642.1	648.0	679.5	732.7	738.7	722.9	715.0	709.1	701.2	701.2
32.5°	577.1	585.0	594.8	622.5	673.7	681.6	671.7	665.8	655.9	652.0	646.1
35°	506.3	525.9	547.6	581.1	636.3	640.2	628.4	610.6	587.0	581.1	577.1
37.5°	476.7	480.6	508.2	547.6	604.8	608.7	592.9	563.3	545.6	547.6	551.6
40°	457.0	462.9	478.6	518.0	575.2	581.1	567.3	545.6	527.9	529.9	535.8
42.5°	441.2	449.1	459.0	484.6	541.7	553.5	549.5	529.9	512.2	516.1	524.0
45°	433.3	439.3	439.3	457.0	512.2	529.9	531.8	516.1	502.3	506.3	516.1
47.5°	429.4	429.4	423.5	437.3	492.4	510.1	514.1	506.3	498.4	502.3	512.2
50°	423.5	415.6	409.7	421.6	476.7	492.4	496.4	490.5	494.4	502.3	508.2
52.5°	405.8	397.9	397.9	405.8	460.9	476.7	478.6	474.8	482.6	492.4	502.3
55°	384.1	384.1	386.1	393.9	453.1	464.8	462.9	459.0	466.9	478.6	488.5
57.5°	364.4	362.4	372.3	382.2	443.2	451.1	447.1	447.1	453.1	462.9	472.7
60°	352.6	342.8	350.7	366.4	433.3	441.2	435.4	433.3	443.2	451.1	459.0
62.5°	340.7	330.9	336.9	352.6	419.6	425.4	421.6	421.6	431.4	437.3	445.2
65°	323.0	319.1	323.0	338.8	407.7	409.7	409.7	411.6	419.6	423.5	431.4
67.5°	307.3	307.3	309.2	325.0	397.9	393.9	393.9	403.8	405.8	409.7	417.6
70°	287.6	291.5	291.5	311.2	390.1	376.2	378.2	386.1	390.1	393.9	395.9
72.5°	266.0	267.9	271.8	297.5	378.2	358.5	360.5	366.4	368.4	374.3	376.2
75°	242.2	244.3	250.2	283.7	370.3	340.7	336.9	340.7	344.7	348.6	346.7
77.5°	214.7	218.6	224.5	275.8	344.7	336.9	307.3	311.2	315.2	315.2	313.2
80°	181.3	187.1	197.0	263.9	291.5	325.0	273.8	275.8	277.7	277.7	273.8
82.5°	136.0	147.7	161.5	218.6	228.5	277.7	236.4	240.3	234.4	230.5	228.5
85°	88.7	98.5	118.2	151.7	167.5	218.6	195.0	197.0	185.2	183.2	183.2
87.5°	35.5	37.4	53.2	76.8	100.5	136.0	139.8	143.8	133.9	133.9	137.9
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°	9262.0	9262.0	9262.0	9262.0	9262.0	9262.0	9262.0	9262.0	9262.0	9262.0	9262.0
2.5°	8440.6	8637.5	8864.1	9094.5	9283.6	9527.9	9764.3	10016.4	10144.4	10219.3	10430.0
5°	6843.0	7112.9	7434.0	7794.5	8093.9	8606.0	9157.6	9772.1	10067.6	10359.1	10910.7
7.5°	4894.9	5158.8	5533.1	6000.0	6425.5	7101.1	7827.9	8659.2	9068.9	9541.7	10445.8
10°	3634.2	3914.0	4252.8	4648.7	5068.3	5771.5	6587.0	7520.6	7971.8	8505.5	9533.8
12.5°	2946.8	3273.7	3624.4	3979.0	4339.5	4812.2	5667.0	6705.1	7189.7	7727.5	8757.7
15°	2298.8	2649.3	3027.5	3413.7	3772.1	4300.1	5172.7	6399.9	6953.4	7473.4	8316.5
17.5°	1627.0	1957.9	2383.5	2852.3	3372.3	3996.7	5066.3	6533.8	7205.5	7749.2	8314.4
20°	1109.0	1337.5	1763.0	2318.4	2960.6	3752.5	5105.6	7004.6	7843.7	8440.6	8655.3
22.5°	886.4	994.7	1282.4	1847.7	2606.1	3575.2	5267.2	7650.6	8759.6	9486.5	9275.7
25°	805.7	866.7	1016.4	1459.6	2290.9	3457.0	5582.3	8503.6	9786.0	10522.6	10022.3
27.5°	756.4	809.6	906.1	1199.6	2019.0	3380.1	5982.2	9508.2	10942.2	11546.9	10800.3
30°	724.9	778.1	866.7	1077.5	1814.2	3265.9	6332.9	10426.1	11866.0	12258.0	11219.9
32.5°	663.8	705.2	778.1	965.2	1660.6	3132.0	6636.2	11247.5	12738.6	12868.6	11724.1
35°	600.8	644.2	717.0	874.6	1569.9	3027.5	6795.8	11976.3	13603.4	13479.3	12224.5
37.5°	577.1	612.6	679.5	809.6	1520.7	2958.6	6856.8	12693.3	14531.1	14154.9	12573.2
40°	561.4	592.9	652.0	766.3	1506.9	2893.6	6843.0	13374.9	15431.3	14854.2	12846.9
42.5°	549.5	577.1	632.3	736.7	1469.5	2832.6	6797.7	13963.8	16152.3	15456.9	13108.9
45°	539.7	569.3	624.4	752.5	1400.5	2765.5	6770.2	14501.6	16705.8	15965.2	13459.6
47.5°	535.8	569.3	626.4	748.5	1325.6	2690.8	6868.7	15098.4	17188.3	16392.6	13926.5
50°	529.9	567.3	669.7	713.1	1223.2	2598.2	7201.6	15809.5	17694.6	16873.3	14531.1
52.5°	520.1	565.3	715.0	685.5	1091.3	2470.1	7741.3	16814.1	18569.2	17808.9	15425.4
55°	508.2	569.3	683.5	642.1	951.4	2304.6	8281.0	18191.0	19987.4	19317.7	16709.7
57.5°	494.4	563.3	646.1	602.7	835.2	2095.8	8690.7	19319.7	21157.5	20873.8	18287.5
60°	484.6	577.1	581.1	579.1	760.4	1896.9	8730.1	19246.8	21494.3	21884.4	19831.8
62.5°	472.7	589.0	529.9	561.4	722.9	1711.7	8243.6	18055.1	20925.1	21754.4	21090.6
65°	457.0	514.1	502.3	545.6	722.9	1613.3	7110.9	16071.5	19351.3	20525.2	21774.0
67.5°	441.2	466.9	482.6	524.0	738.7	1520.7	5714.4	13556.0	16869.3	18541.6	21005.9
70°	419.6	441.2	460.9	504.3	730.8	1455.7	4497.0	10865.4	13883.1	15797.7	18880.4
72.5°	399.9	415.6	435.4	474.8	730.8	1426.1	3612.6	8523.3	10599.4	12212.7	15640.1
75°	370.3	384.1	401.8	445.2	717.0	1304.0	2712.4	6829.2	7755.1	8765.6	12340.8
77.5°	340.7	350.7	364.4	407.7	646.1	1089.3	1918.5	5288.9	5745.9	6305.3	9620.4
80°	303.3	311.2	321.1	364.4	535.8	845.1	1248.8	4136.6	4296.1	4565.9	6328.9
82.5°	260.0	271.8	273.8	313.2	431.4	612.6	742.6	2834.5	2832.6	3228.5	4465.5
85°	212.8	218.6	222.6	246.2	319.1	407.7	488.5	1548.2	1380.8	1934.3	3878.5
87.5°	159.6	153.6	159.6	165.5	210.7	240.3	262.0	285.6	171.3	350.7	2255.4
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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CATALOG NUMBER: NAV-AF-05-D-UNV-SLR

**CANDELA DISTRIBUTION (continued):**

	295°	305°	315°	325°	335°	345°	355°	360°
0°	9262.0	9262.0	9262.0	9262.0	9262.0	9262.0	9262.0	9262.0
2.5°	10542.3	10658.5	10589.6	10506.8	10300.0	9996.7	9764.3	9561.3
5°	11292.8	11507.5	11413.0	11105.7	10569.8	9961.2	9321.0	8931.1
7.5°	11198.2	11623.7	11586.4	11074.2	10305.9	9409.7	8509.5	7995.4
10°	10441.9	11038.7	11141.2	10617.2	9803.7	8801.1	7759.0	7177.9
12.5°	9618.5	10120.8	10329.6	10130.6	9364.4	8345.9	7284.3	6703.2
15°	8929.0	9183.1	9390.0	9518.0	9043.3	8184.5	7201.6	6602.7
17.5°	8418.9	8369.7	8543.0	8850.3	8870.0	8399.1	7575.8	6906.0
20°	8172.7	7786.6	7887.1	8318.4	8822.6	8944.8	8322.3	7530.6
22.5°	8158.9	7556.1	7575.8	8040.7	8958.6	9689.4	9254.0	8351.9
25°	8371.6	7530.6	7548.3	8011.1	9198.9	10439.9	10331.5	9279.7
27.5°	8734.1	7640.8	7629.0	8141.2	9520.0	11066.3	11418.9	10414.3
30°	9126.1	7800.4	7770.8	8349.9	9835.2	11452.3	12191.0	11269.1
32.5°	9614.5	8084.0	7981.6	8655.3	10146.3	11822.7	12850.9	12068.9
35°	10079.4	8499.6	8351.9	9092.5	10479.3	12234.4	13589.6	12953.3
37.5°	10554.1	9120.1	9037.4	9722.8	10950.1	12681.5	14434.7	13955.9
40°	11162.8	10002.6	9963.2	10638.8	11578.5	13170.0	15382.1	14999.9
42.5°	11818.8	10940.3	10906.7	11690.7	12358.5	13660.5	16193.6	15896.2
45°	12486.5	12076.8	12084.6	12813.5	13179.9	14123.4	16831.8	16613.2
47.5°	13274.4	13319.7	13601.4	13977.6	13979.6	14639.4	17397.2	17281.0
50°	14275.1	14820.7	15340.7	15399.8	14787.2	15321.0	18088.5	18045.3
52.5°	15407.7	16552.2	17156.8	16969.7	15575.1	16166.1	19110.9	19108.9
55°	16753.1	18362.4	18931.6	18612.6	16518.6	17267.2	20446.4	20359.8
57.5°	18147.7	20103.6	20562.6	20147.0	17698.6	18549.5	21785.9	21326.9
60°	19654.6	21602.7	22069.6	21445.1	19022.3	19827.9	22672.3	21598.8
62.5°	20641.4	22479.2	22814.1	22215.3	20208.1	21130.0	22957.9	21273.7
65°	20692.7	21896.2	21984.8	21772.1	20712.3	22260.6	22544.2	20310.5
67.5°	19286.2	19357.1	19473.3	19701.8	19634.8	21756.3	20948.7	18061.0
70°	16278.3	15332.8	15715.0	15935.6	16432.0	19351.3	17999.9	14688.8
72.5°	12447.1	11066.3	11499.6	11424.8	12457.0	15872.6	13770.8	11314.4
75°	8958.6	7546.3	7579.8	7583.6	8950.7	12669.7	9390.0	8034.8
77.5°	6088.6	5340.1	5450.4	5381.4	5990.1	9925.8	6760.3	5791.2
80°	4164.1	4144.5	4168.1	4006.6	3994.7	6415.6	5005.2	4619.1
82.5°	3088.6	2854.2	2820.8	2649.3	3061.1	4904.7	3799.8	3319.1
85°	2436.7	1579.7	1372.9	1656.6	2651.4	4512.7	2316.5	1701.9
87.5°	1032.2	620.5	376.2	744.6	1473.4	3307.3	642.1	330.9
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)