

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: P196220

Luminaire Tested: **NAV-AF-02-D-UNV-SLL-1200**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196220
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-02-D-UNV-SLL-1200
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 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: 12071.8 lumens
Efficiency: N/A
Efficacy: 93.6 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B2 - U0 - G3

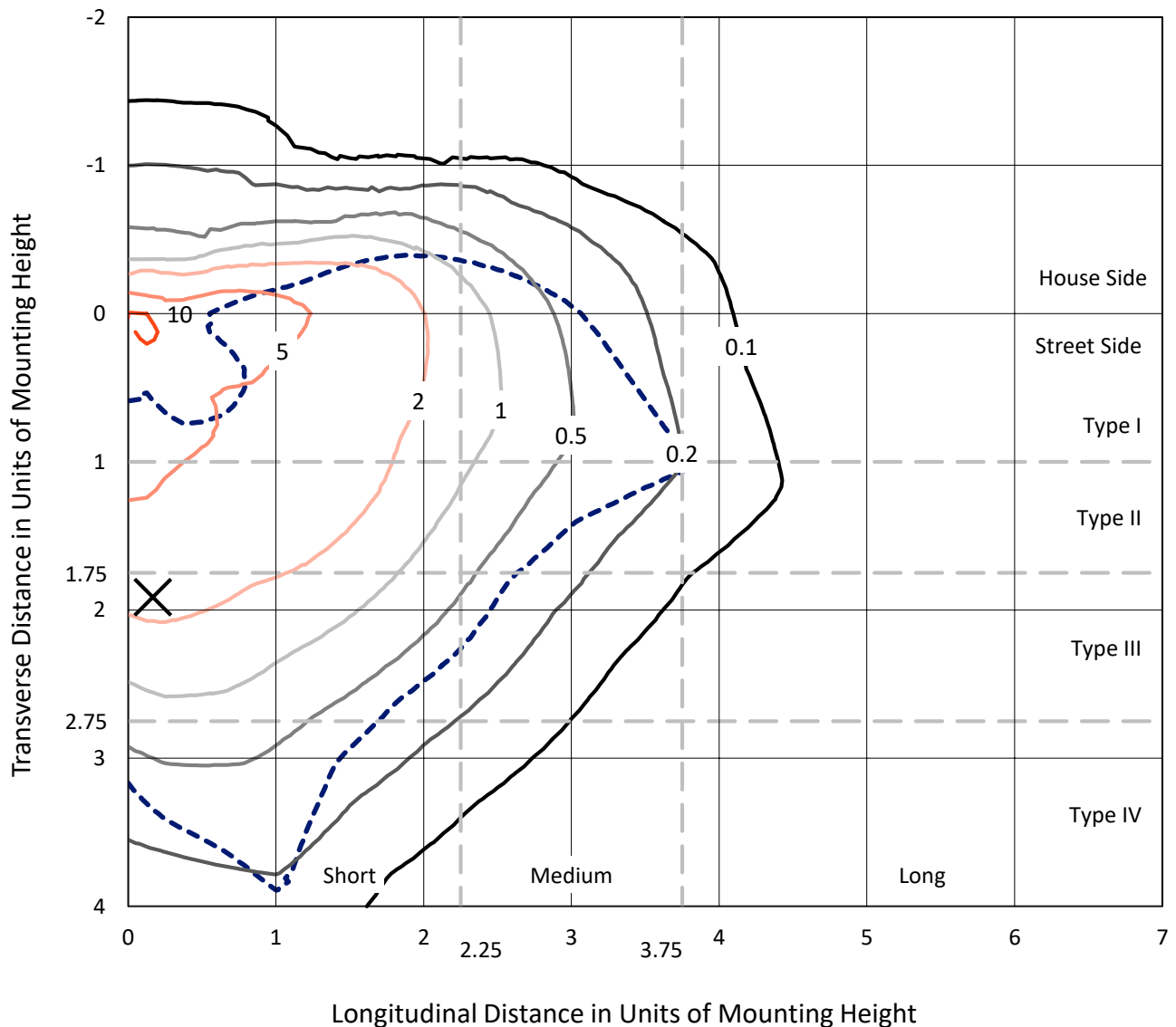
Input Watts (W): 129
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

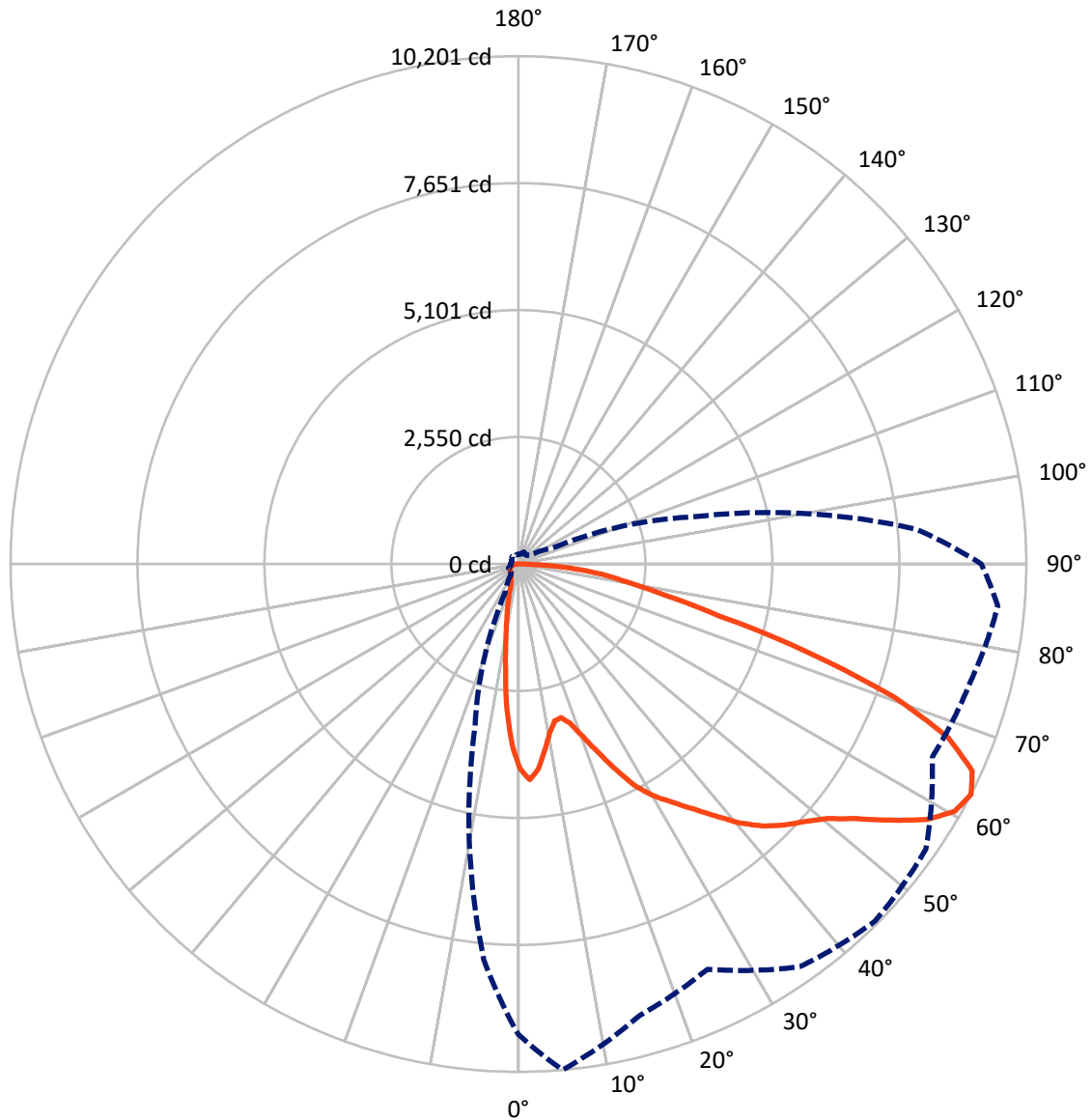
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 11.8 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
House Side	Lumens	2138.5	0.0	2138.5
	% Fixture	17.7	0.0	17.7
Street Side	Lumens	9933.3	0.0	9933.3
	% Fixture	82.3	0.0	82.3
Total	Lumens	12071.8	0.0	12071.8
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	299.3	2.5
10°-20°	546.7	4.5
20°-30°	786.3	6.5
30°-40°	1204.2	10.0
40°-50°	1760.6	14.6
50°-60°	2561.7	21.2
60°-70°	2968.1	24.6
70°-80°	1547.2	12.8
80°-90°	397.7	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°	12071.8	100.0
0°-180°	12071.8	100.0



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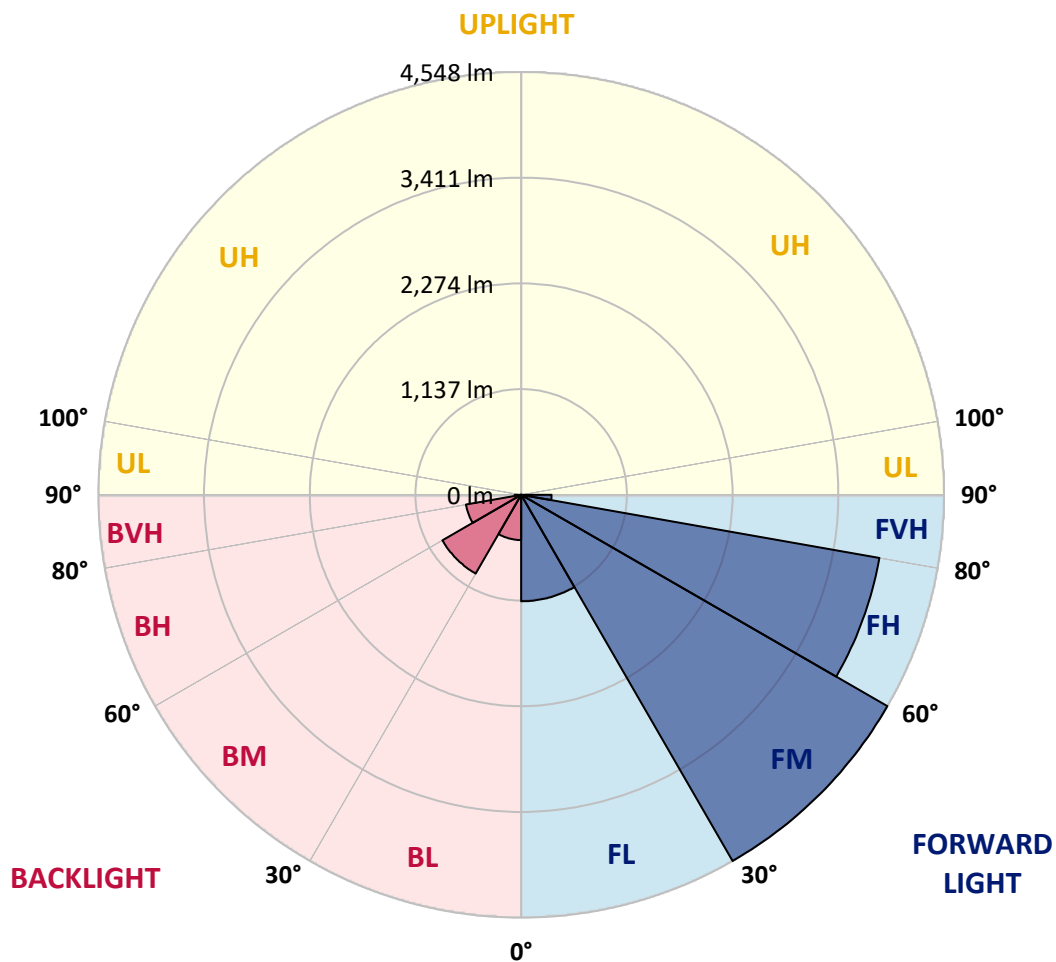
CATALOG NUMBER: NAV-AF-02-D-UNV-SLL-1200

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1145.7	9.5			
FM	(30°-60°)	4548.1	37.7			
FH	(60°-80°)	3912.3	32.4			G2/5000
FVH	(80°-90°)	327.2	2.7			G3/500
BL	(0°-30°)	486.6	4.0	B1/500		
BM	(30°-60°)	978.5	8.1	B1/1000		
BH	(60°-80°)	603.0	5.0	B2/1000		G2/1000
BVH	(80°-90°)	70.5	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°	4115.5	4115.5	4115.5	4115.5	4115.5	4115.5	4115.5	4115.5	4115.5	4115.5	4115.5
2.5°	4248.6	4338.7	4442.0	4576.8	4668.7	4705.5	4736.1	4684.5	4634.6	4540.9	4507.6
5°	3968.4	4141.8	4426.2	4696.7	4934.8	5071.3	5113.3	5018.0	4848.2	4603.1	4473.6
7.5°	3552.7	3781.1	4181.2	4579.4	4920.8	5148.3	5165.0	4975.9	4641.5	4239.8	4029.7
10°	3189.5	3447.7	3910.7	4356.2	4717.7	4950.6	4905.0	4639.8	4236.3	3779.4	3542.3
12.5°	2978.5	3236.7	3708.5	4161.1	4501.5	4590.0	4497.2	4274.0	3891.5	3433.7	3194.8
15°	2933.9	3200.0	3636.8	4018.4	4229.3	4172.4	4080.6	3967.6	3695.4	3320.8	3089.7
17.5°	3068.8	3366.3	3732.1	3941.3	3932.6	3796.1	3719.0	3740.9	3694.5	3443.4	3201.7
20°	3346.2	3698.1	3974.6	3920.4	3696.2	3504.6	3459.9	3631.5	3846.0	3750.5	3485.3
22.5°	3711.2	4112.1	4305.5	3980.7	3572.9	3366.3	3357.5	3625.3	4121.7	4215.3	3892.3
25°	4123.4	4590.8	4639.0	4087.5	3559.8	3354.1	3346.2	3719.9	4453.4	4675.7	4348.4
27.5°	4627.5	5073.9	4917.3	4230.2	3617.5	3390.0	3395.2	3881.0	4799.1	5130.8	4862.2
30°	5007.4	5417.0	5088.9	4370.3	3710.2	3453.0	3466.1	4055.2	4985.6	5446.8	5272.6
32.5°	5362.8	5710.3	5253.4	4508.6	3846.0	3546.6	3592.1	4272.3	5209.6	5718.2	5660.4
35°	5755.8	6038.5	5436.3	4656.5	4040.2	3711.2	3776.8	4478.8	5432.0	5989.5	6044.6
37.5°	6201.3	6414.0	5635.0	4865.7	4320.3	4015.8	4052.5	4689.7	5586.8	6289.7	6456.9
40°	6665.2	6835.1	5852.1	5144.8	4727.4	4427.1	4444.6	4960.2	5708.6	6600.4	6856.8
42.5°	7063.5	7195.6	6070.0	5491.5	5194.7	4846.4	4861.3	5251.6	5825.0	6868.3	7177.2
45°	7382.0	7479.2	6275.7	5856.5	5693.6	5369.8	5366.3	5548.4	5980.8	7094.1	7423.1
47.5°	7678.8	7730.4	6505.0	6211.8	6210.9	6043.8	5918.6	5898.4	6188.1	7284.0	7637.7
50°	8018.4	8037.6	6807.8	6570.7	6842.9	6816.6	6585.6	6343.1	6456.9	7497.6	7862.6
52.5°	8491.0	8491.9	7183.4	6920.8	7540.5	7623.6	7354.9	6846.4	6854.3	7913.3	8251.2
55°	9046.8	9085.3	7672.6	7340.1	8270.5	8412.2	8159.3	7444.2	7425.0	8583.8	8881.4
57.5°	9476.6	9680.5	8242.4	7864.3	8952.3	9137.0	8933.0	8063.9	8126.0	9275.3	9401.3
60°	9597.3	10074.4	8810.5	8452.5	9529.1	9806.5	9599.1	8733.4	8812.2	9724.3	9551.0
62.5°	9453.0	10201.3	9389.1	8979.5	9871.4	10137.4	9988.6	9172.0	9371.6	9666.5	9298.0
65°	9025.0	10017.5	9891.4	9203.5	9674.4	9768.9	9729.5	9194.7	9675.3	9120.3	8598.7
67.5°	8025.4	9308.5	9667.4	8724.7	8754.5	8652.9	8601.3	8569.8	9333.9	8238.9	7495.9
70°	6526.9	7998.2	8598.7	7301.5	7081.0	6983.0	6813.2	7233.3	8389.5	7019.7	6168.9
72.5°	5027.6	6119.0	7052.9	5535.2	5076.6	5109.8	4917.3	5530.9	6949.6	5426.7	4709.9
75°	3570.2	4172.4	5629.7	3977.2	3369.8	3368.1	3353.1	3980.7	5483.6	3895.0	3445.9
77.5°	2573.3	3003.9	4410.5	2661.7	2391.2	2421.8	2372.8	2705.5	4274.8	2801.8	2553.2
80°	2052.6	2224.1	2850.8	1775.0	1780.3	1852.1	1841.6	1850.3	2812.3	2028.9	1908.9
82.5°	1474.8	1688.4	2179.4	1360.2	1177.2	1253.4	1268.3	1372.4	1984.2	1434.6	1258.6
85°	756.3	1029.3	2005.3	1178.1	736.1	610.1	701.9	1082.7	1723.4	859.5	613.6
87.5°	147.0	285.3	1469.6	654.7	330.8	167.2	275.7	458.7	1002.2	155.8	76.1
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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CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°	185°
0°	4115.5	4115.5	4115.5	4115.5	4115.5	4115.5	4115.5	4115.5	4115.5	4115.5	4115.5
2.5°	4450.8	4338.7	4233.7	4125.2	4041.2	3938.8	3838.1	3750.5	3665.6	3609.6	3627.2
5°	4342.2	4069.1	3824.1	3596.5	3463.4	3303.3	3160.6	3040.7	2947.9	2888.4	2924.3
7.5°	3847.7	3478.3	3155.4	2855.2	2666.1	2458.7	2292.3	2175.1	2103.3	2063.0	2121.7
10°	3341.8	2926.9	2564.5	2252.0	2065.6	1889.7	1739.1	1614.8	1518.6	1473.0	1496.7
12.5°	2979.4	2518.2	2138.3	1928.3	1768.1	1610.5	1454.7	1309.4	1186.8	1130.9	1119.5
15°	2843.8	2298.5	1910.8	1676.1	1516.8	1345.3	1177.2	1021.4	905.0	856.9	846.4
17.5°	2903.2	2251.2	1775.9	1498.4	1267.4	1059.1	870.0	723.0	637.2	610.1	612.6
20°	3112.4	2268.7	1667.4	1315.5	1030.2	783.4	594.3	492.8	456.0	449.9	456.8
22.5°	3399.6	2340.5	1588.6	1158.0	821.0	569.8	442.0	393.8	384.2	383.4	390.4
25°	3778.6	2480.6	1536.1	1017.9	648.6	451.6	385.1	358.0	350.2	351.9	358.9
27.5°	4225.0	2658.2	1502.0	897.1	533.1	402.6	359.8	336.1	328.3	330.0	335.2
30°	4632.8	2814.0	1451.2	806.1	478.7	385.1	345.8	322.1	311.6	311.6	315.1
32.5°	4997.8	2948.8	1391.7	737.9	428.9	345.8	313.3	294.9	287.0	289.7	291.4
35°	5321.7	3019.6	1345.3	697.6	388.6	318.6	286.2	267.0	256.5	258.2	260.9
37.5°	5640.2	3046.9	1314.7	675.8	359.8	302.0	272.2	256.5	245.1	243.4	242.4
40°	5943.1	3040.7	1285.7	669.6	340.4	289.7	263.4	249.5	238.0	235.5	234.6
42.5°	6204.8	3020.6	1258.6	652.9	327.3	281.0	256.5	244.2	232.8	229.3	227.6
45°	6443.8	3008.3	1228.9	622.4	334.4	277.4	253.0	239.8	229.3	224.9	223.2
47.5°	6708.9	3052.1	1195.6	589.0	332.6	278.3	253.0	238.0	227.6	223.2	221.5
50°	7024.9	3200.0	1154.5	543.5	316.8	297.6	252.1	235.5	225.9	223.2	219.7
52.5°	7471.3	3439.8	1097.6	484.9	304.6	317.7	251.2	231.1	223.2	218.8	214.4
55°	8083.2	3679.7	1024.1	422.8	285.3	303.7	253.0	225.9	217.1	212.7	207.5
57.5°	8584.7	3861.7	931.3	371.1	267.8	287.0	250.3	219.7	210.1	205.7	201.3
60°	8552.3	3879.2	842.9	337.9	257.4	258.2	256.5	215.3	204.0	200.4	196.9
62.5°	8022.8	3663.0	760.6	321.2	249.5	235.5	261.7	210.1	197.8	194.4	191.7
65°	7141.3	3159.7	716.9	321.2	242.4	223.2	228.4	203.1	191.7	188.2	186.5
67.5°	6023.6	2539.2	675.8	328.3	232.8	214.4	207.5	196.1	185.6	182.1	180.3
70°	4828.0	1998.2	646.8	324.7	224.0	204.8	196.1	186.5	175.9	175.0	173.3
72.5°	3787.3	1605.2	633.7	324.7	210.9	193.4	184.6	177.7	167.2	166.3	163.7
75°	3034.6	1205.2	579.4	318.6	197.8	178.5	170.6	164.6	154.1	154.9	153.1
77.5°	2350.1	852.5	484.1	287.0	181.2	161.9	155.8	151.4	139.1	140.0	140.0
80°	1838.0	555.0	375.5	238.0	161.9	142.7	138.3	134.8	121.6	123.4	123.4
82.5°	1259.6	330.0	272.2	191.7	139.1	121.6	120.8	115.5	101.6	102.4	104.1
85°	687.9	217.1	181.2	141.8	109.5	98.9	97.2	94.5	81.4	81.4	82.2
87.5°	126.9	116.4	106.8	93.7	73.6	70.9	68.2	70.9	61.3	59.5	59.5
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°	4115.5	4115.5	4115.5	4115.5	4115.5	4115.5	4115.5	4115.5	4115.5	4115.5	4115.5
2.5°	3586.0	3525.6	3483.6	3446.8	3358.4	3364.6	3376.8	3394.4	3339.1	3368.1	3404.0
5°	2888.4	2838.5	2800.8	2742.2	2618.9	2575.1	2547.0	2534.8	2452.5	2470.0	2508.6
7.5°	2129.6	2128.7	2115.6	2049.9	1901.1	1810.9	1751.4	1733.1	1682.2	1701.6	1760.2
10°	1499.3	1515.1	1509.0	1450.3	1317.3	1252.5	1239.4	1276.1	1277.1	1314.7	1415.4
12.5°	1083.6	1074.8	1066.9	1018.9	919.0	908.5	938.3	989.1	1001.3	1041.6	1146.6
15°	808.7	787.8	783.4	745.7	680.1	689.7	711.6	737.9	738.8	766.7	853.3
17.5°	606.6	606.6	613.6	589.0	541.8	537.5	526.0	519.0	508.5	519.9	567.2
20°	470.9	492.8	510.2	496.2	453.4	432.4	410.5	396.5	388.6	389.5	403.5
22.5°	403.5	421.0	443.8	436.8	400.9	373.8	359.8	350.2	344.0	344.0	351.9
25°	369.4	380.7	401.7	398.2	367.6	345.8	334.4	324.7	317.7	316.8	324.7
27.5°	342.3	349.2	363.2	361.5	330.0	316.0	308.9	302.8	298.5	297.6	305.5
30°	317.7	321.2	328.3	325.6	302.0	288.0	285.3	282.7	280.1	281.0	292.4
32.5°	295.8	298.5	302.8	299.3	276.6	264.3	259.9	256.5	253.8	256.5	269.5
35°	271.3	279.2	284.5	282.7	258.2	243.4	233.7	224.9	221.5	224.0	239.0
37.5°	250.3	263.4	270.5	268.7	243.4	225.9	213.6	211.9	211.9	215.3	230.2
40°	242.4	252.1	258.2	255.5	230.2	212.7	205.7	203.1	204.0	207.5	223.2
42.5°	235.5	244.2	245.9	240.7	215.3	204.0	199.6	196.1	197.8	202.2	218.0
45°	229.3	236.3	235.5	227.6	203.1	195.2	195.2	192.5	193.4	196.9	213.6
47.5°	224.9	228.4	226.7	218.8	194.4	188.2	190.8	190.8	192.5	195.2	211.9
50°	218.0	220.5	218.8	211.9	187.3	182.1	184.6	188.2	190.0	192.5	207.5
52.5°	210.9	212.7	211.9	204.8	180.3	176.8	176.8	180.3	183.8	187.3	200.4
55°	204.0	205.7	206.5	201.3	175.0	171.5	170.6	170.6	174.2	179.4	193.4
57.5°	198.7	198.7	200.4	196.9	169.8	165.4	161.0	161.9	166.3	170.6	184.6
60°	192.5	193.4	196.1	192.5	162.8	155.8	152.3	156.7	158.5	162.8	177.7
62.5°	187.3	187.3	189.0	186.5	156.7	149.7	147.0	151.4	151.4	155.8	170.6
65°	182.9	182.1	182.1	181.2	150.6	143.5	141.8	143.5	144.4	148.8	163.7
67.5°	179.4	175.0	175.0	176.8	144.4	137.4	136.6	136.6	137.4	142.7	155.8
70°	171.5	168.1	167.2	173.3	138.3	129.5	129.5	127.8	129.5	132.2	146.2
72.5°	162.8	160.2	159.3	168.1	132.2	120.8	119.1	118.2	119.1	121.6	134.8
75°	151.4	149.7	151.4	164.6	126.0	111.2	108.5	107.6	107.6	108.5	122.5
77.5°	138.3	136.6	149.7	153.1	122.5	99.7	97.2	95.4	93.7	93.7	109.5
80°	122.5	121.6	144.4	129.5	117.3	87.6	83.2	80.5	78.8	77.9	93.7
82.5°	106.8	105.1	123.4	101.6	97.2	71.8	65.7	60.4	57.8	57.8	71.8
85°	87.6	86.6	97.2	74.4	67.4	52.5	43.8	39.4	35.9	35.9	46.3
87.5°	63.9	62.2	60.4	44.6	34.2	23.6	16.7	15.8	14.0	13.1	19.2
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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CATALOG NUMBER: NAV-AF-02-D-UNV-SLL-1200

CANDELA DISTRIBUTION (continued):

	295°	305°	315°	325°	335°	345°	355°	360°
0°	4115.5	4115.5	4115.5	4115.5	4115.5	4115.5	4115.5	4115.5
2.5°	3457.4	3530.0	3667.4	3780.3	3930.9	4051.6	4189.1	4248.6
5°	2579.5	2694.0	2904.2	3083.6	3332.2	3562.3	3824.9	3968.4
7.5°	1850.3	2020.1	2179.4	2403.5	2714.2	3023.2	3362.7	3552.7
10°	1530.8	1686.6	1823.2	1982.5	2222.4	2569.8	2975.0	3189.5
12.5°	1268.3	1436.3	1580.8	1751.4	1952.7	2267.0	2729.1	2978.5
15°	972.4	1155.3	1328.7	1534.3	1781.2	2140.0	2655.6	2933.9
17.5°	666.0	862.1	1075.7	1326.9	1624.5	2086.6	2725.6	3068.8
20°	452.6	596.1	828.0	1125.6	1483.6	2061.2	2879.6	3346.2
22.5°	371.9	436.8	610.9	936.5	1368.1	2089.3	3130.0	3711.2
25°	341.4	376.3	475.3	770.3	1279.6	2163.6	3468.7	4123.4
27.5°	322.1	351.9	416.6	651.2	1198.3	2265.2	3881.0	4627.5
30°	310.8	338.7	393.0	589.9	1123.8	2352.7	4235.4	5007.4
32.5°	285.3	306.4	351.0	555.0	1070.4	2423.7	4547.9	5362.8
35°	254.7	280.1	316.8	532.1	1068.7	2456.9	4842.0	5755.8
37.5°	243.4	267.8	294.9	519.9	1079.2	2484.8	5201.7	6201.3
40°	236.3	258.2	280.1	518.1	1088.0	2506.7	5553.6	6665.2
42.5°	230.2	252.1	277.4	506.0	1084.4	2536.5	5865.2	7063.5
45°	228.4	250.3	283.6	487.5	1083.6	2583.0	6112.9	7382.0
47.5°	226.7	259.9	281.8	467.4	1080.1	2680.9	6392.1	7678.8
50°	224.9	277.4	269.5	439.4	1053.8	2848.1	6767.6	8018.4
52.5°	224.0	280.1	256.5	400.9	1006.6	3095.9	7317.3	8491.0
55°	220.5	266.1	233.7	350.2	938.3	3362.7	7906.4	9046.8
57.5°	212.7	237.2	220.5	300.2	840.3	3549.2	8341.3	9476.6
60°	231.9	204.0	211.9	274.9	723.0	3582.5	8360.6	9597.3
62.5°	221.5	185.6	203.1	266.1	640.7	3365.4	7978.1	9453.0
65°	176.8	175.9	195.2	274.9	628.4	2879.6	7332.2	9025.0
67.5°	161.0	168.9	187.3	285.3	636.3	2268.7	6381.6	8025.4
70°	150.6	160.2	176.8	294.9	650.3	1787.3	5137.9	6526.9
72.5°	140.0	147.9	166.3	304.6	640.7	1410.0	4112.1	5027.6
75°	126.9	133.9	151.4	279.2	549.6	1036.4	3267.4	3570.2
77.5°	112.0	118.2	133.1	220.5	413.2	721.2	2447.3	2573.3
80°	96.3	98.9	110.3	161.0	269.5	431.5	1862.6	2052.6
82.5°	76.1	77.0	84.0	118.2	168.1	275.7	1291.9	1474.8
85°	49.0	50.7	54.2	83.2	112.9	176.8	659.9	756.3
87.5°	16.7	19.2	19.2	40.3	55.1	98.0	202.2	147.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)