

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: P196227

Luminaire Tested: **NAV-AF-03-D-UNV-SLR-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196227
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-SLR-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(3) 70 CRI, 4000K, 615mA 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: 10782.9 lumens
Efficiency: N/A
Efficacy: 112.3 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

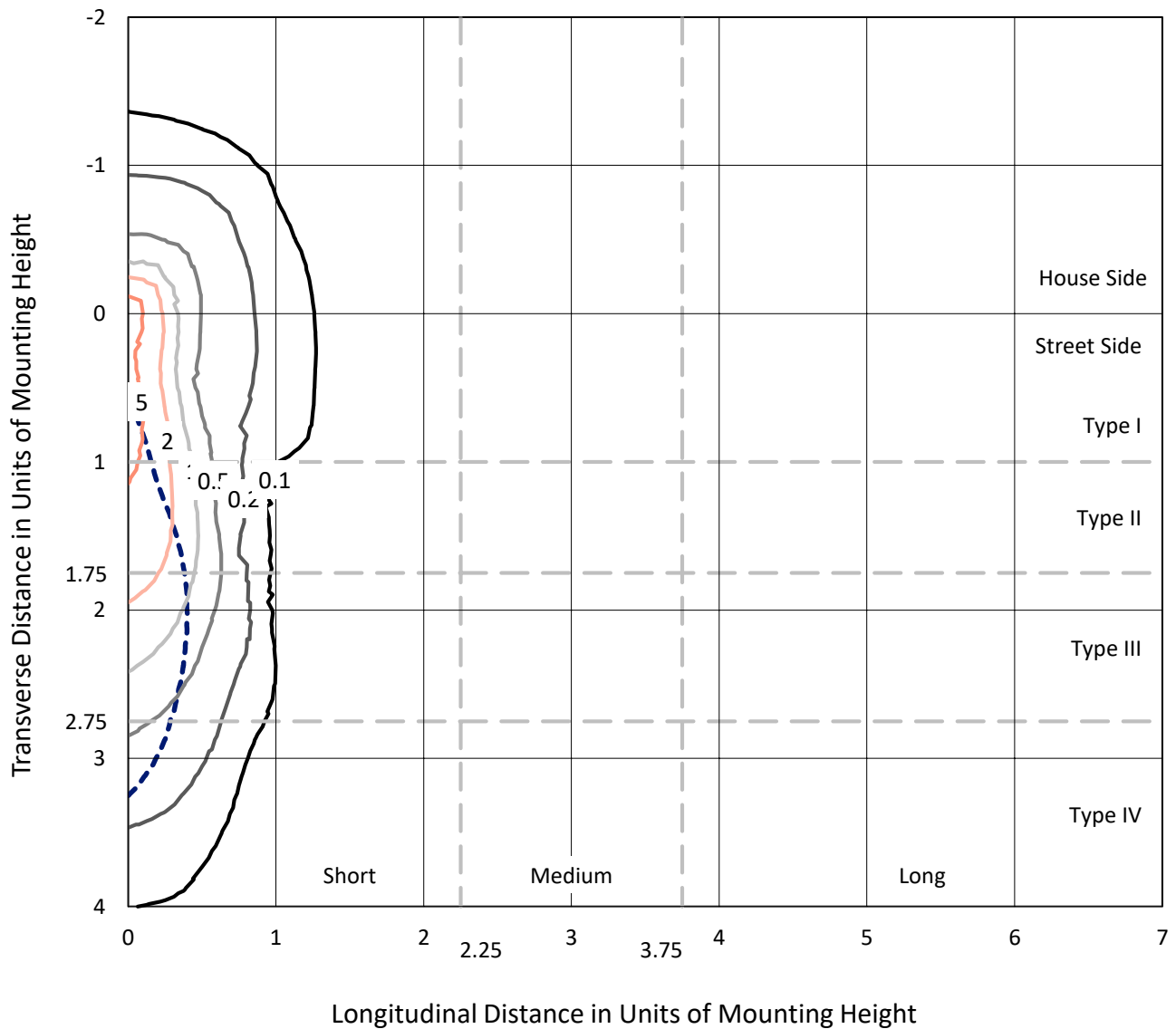
Input Watts (W): 96
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



REPORT NUMBER: P196227
 CATALOG NUMBER: NAV-AF-03-D-UNV-SLR-600

Iso-Footcandle Lines of Horizontal Illumination

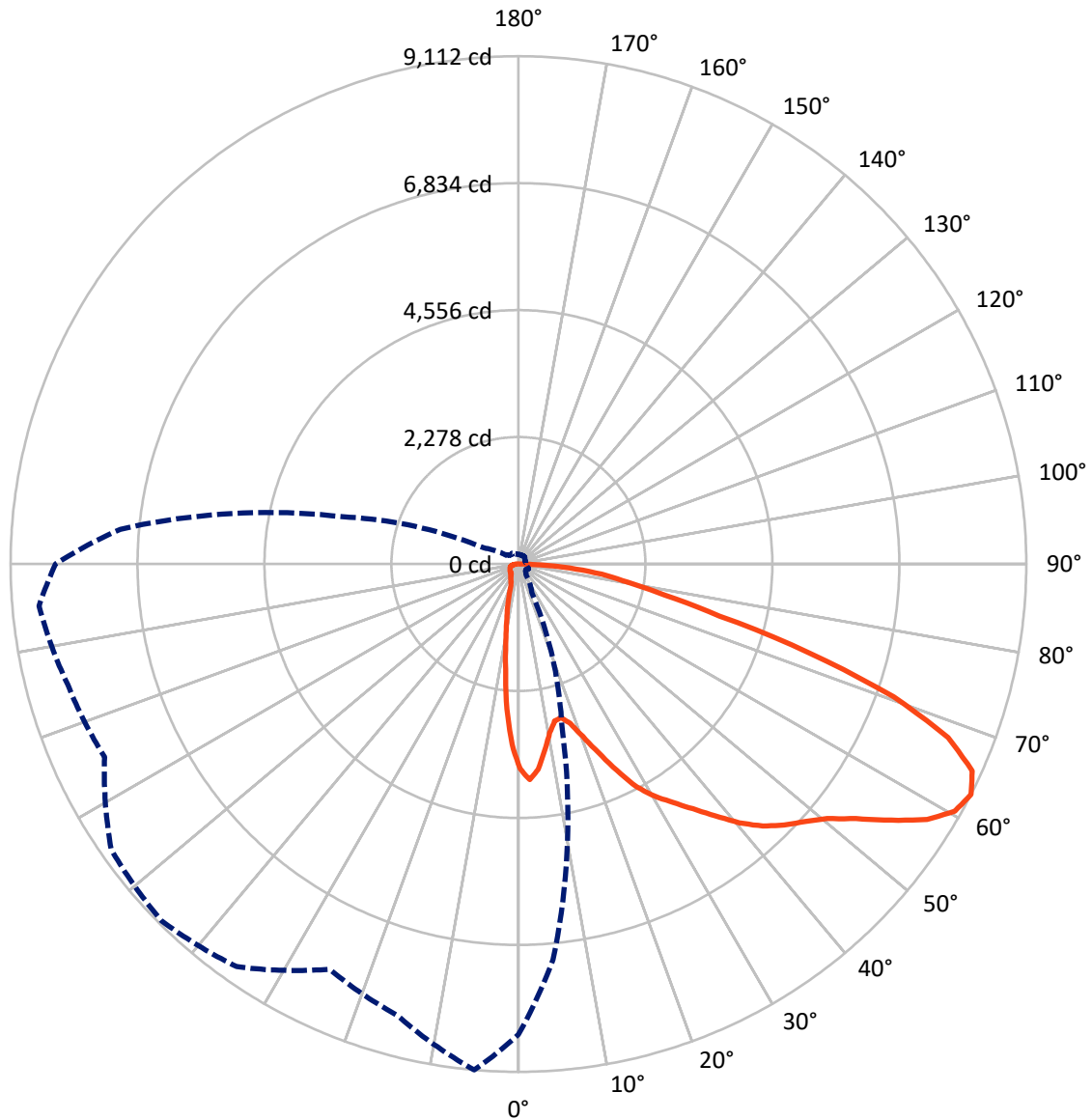
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 9.2 fc
 Type IV - Short - Non-Cutoff

REPORT NUMBER: P196227
CATALOG NUMBER: NAV-AF-03-D-UNV-SLR-600

Luminous Intensity Polar Plot



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

REPORT NUMBER: P196227

CATALOG NUMBER: NAV-AF-03-D-UNV-SLR-600

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1910.2	0.0	1910.2
	% Fixture	17.7	0.0	17.7
Street Side	Lumens	8872.7	0.0	8872.7
	% Fixture	82.3	0.0	82.3
Total	Lumens	10782.9	0.0	10782.9
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	267.3	2.5
10°-20°	488.3	4.5
20°-30°	702.3	6.5
30°-40°	1075.7	10.0
40°-50°	1572.6	14.6
50°-60°	2288.2	21.2
60°-70°	2651.2	24.6
70°-80°	1382.0	12.8
80°-90°	355.3	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°	10782.9	100.0
0°-180°	10782.9	100.0



REPORT NUMBER: P196227

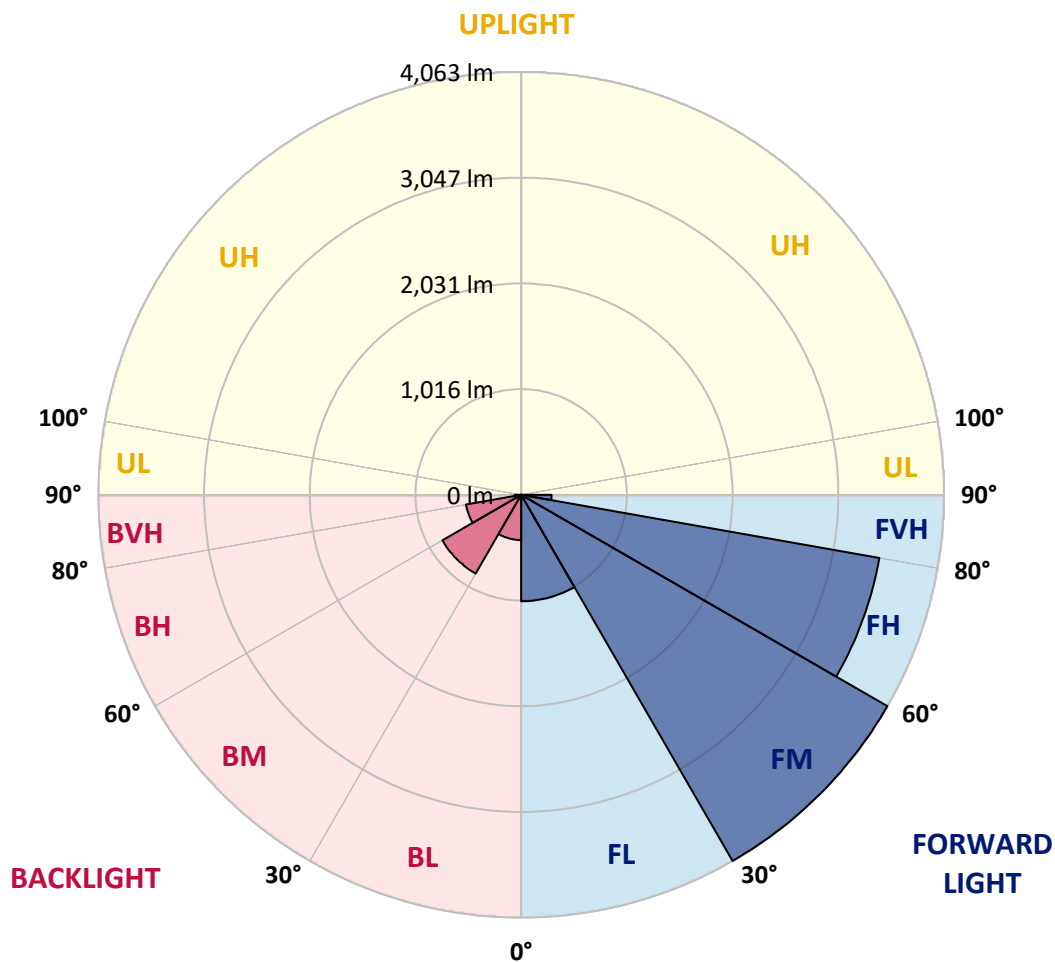
CATALOG NUMBER: NAV-AF-03-D-UNV-SLR-600

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1023.3	9.5			
FM	(30°-60°)	4062.5	37.7			
FH	(60°-80°)	3494.6	32.4			G2/5000
FVH	(80°-90°)	292.3	2.7			G3/500
BL	(0°-30°)	434.6	4.0	B1/500		
BM	(30°-60°)	874.0	8.1	B1/1000		
BH	(60°-80°)	538.6	5.0	B2/1000		G2/1000
BVH	(80°-90°)	63.0	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





REPORT NUMBER: P196227

CATALOG NUMBER: NAV-AF-03-D-UNV-SLR-600

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	3676.1	3676.1	3676.1	3676.1	3676.1	3676.1	3676.1	3676.1	3676.1	3676.1	3676.1
2.5°	3794.9	3741.7	3619.0	3511.2	3376.7	3275.8	3153.0	3088.2	3040.5	3008.4	2982.6
5°	3544.7	3416.6	3182.0	2976.4	2754.4	2594.1	2406.4	2304.0	2240.7	2206.3	2190.6
7.5°	3173.4	3003.8	2700.4	2424.4	2146.9	1946.8	1804.5	1652.8	1572.3	1519.9	1502.6
10°	2848.9	2657.4	2295.4	1985.0	1770.8	1628.5	1506.6	1367.4	1264.2	1174.2	1140.7
12.5°	2660.5	2437.7	2024.9	1744.2	1564.4	1412.0	1283.0	1132.8	1024.2	930.4	894.4
15°	2620.7	2372.0	1911.6	1591.0	1370.5	1186.8	1032.0	868.6	762.3	684.9	659.9
17.5°	2741.1	2434.6	1863.8	1451.1	1185.2	960.9	770.1	594.9	506.7	464.4	454.2
20°	2988.9	2572.2	1841.2	1325.2	1005.5	739.6	532.4	404.2	360.4	347.9	347.1
22.5°	3314.9	2795.8	1866.2	1222.0	836.6	545.7	390.2	332.3	314.3	307.3	307.3
25°	3683.1	3098.3	1932.7	1143.0	688.0	424.5	336.1	304.9	290.0	283.1	283.8
27.5°	4133.4	3466.6	2023.4	1070.3	581.6	372.1	314.3	287.8	272.8	265.9	266.6
30°	4472.8	3783.2	2101.6	1003.8	526.9	351.1	302.6	277.5	261.2	250.9	250.2
32.5°	4790.2	4062.3	2164.9	956.2	495.7	313.5	273.6	254.9	240.8	229.0	226.7
35°	5141.2	4325.0	2194.5	954.6	475.4	283.1	250.2	227.5	213.4	200.2	197.8
37.5°	5539.2	4646.3	2219.6	964.0	464.4	263.5	239.3	217.4	205.6	192.3	189.2
40°	5953.6	4960.6	2239.1	971.8	462.9	250.2	230.7	211.1	199.4	185.3	182.2
42.5°	6309.3	5238.9	2265.7	968.6	451.9	247.9	225.2	205.6	194.7	180.6	176.7
45°	6593.8	5460.2	2307.2	967.9	435.5	253.3	223.6	204.1	190.8	175.9	172.8
47.5°	6858.9	5709.6	2394.7	964.7	417.5	251.7	232.2	202.4	189.2	174.3	172.0
50°	7162.3	6045.0	2544.1	941.3	392.5	240.8	247.9	200.9	185.3	172.0	169.6
52.5°	7584.5	6536.0	2765.3	899.1	358.0	229.0	250.2	200.2	179.0	167.4	164.2
55°	8080.9	7062.1	3003.8	838.1	312.7	208.8	237.6	197.0	172.8	160.3	155.6
57.5°	8464.7	7450.8	3170.2	750.5	268.1	197.0	211.9	190.0	165.0	152.4	148.5
60°	8572.6	7468.0	3200.0	645.8	245.5	189.2	182.2	207.1	158.7	145.5	141.5
62.5°	8443.6	7126.3	3006.1	572.3	237.6	181.4	165.7	197.8	152.4	139.1	135.2
65°	8061.4	6549.3	2572.2	561.4	245.5	174.3	157.1	157.9	146.2	132.9	129.0
67.5°	7168.5	5700.3	2026.5	568.4	254.9	167.4	150.9	143.8	139.1	127.5	122.8
70°	5830.0	4589.3	1596.5	580.9	263.5	157.9	143.1	134.5	130.5	118.0	115.7
72.5°	4490.8	3673.0	1259.6	572.3	272.1	148.5	132.2	125.1	120.4	108.6	106.3
75°	3189.0	2918.6	925.7	491.0	249.4	135.2	119.6	113.3	109.5	97.0	96.2
77.5°	2298.6	2185.9	644.3	369.0	197.0	118.9	105.6	100.0	97.7	83.7	83.7
80°	1833.3	1663.7	385.4	240.8	143.8	98.5	88.4	86.0	83.7	69.6	70.4
82.5°	1317.4	1154.0	246.2	150.1	105.6	75.1	68.8	68.0	64.1	51.6	51.6
85°	675.5	589.5	157.9	100.9	74.3	48.5	45.3	43.8	41.4	32.0	32.0
87.5°	131.3	180.6	87.6	49.2	36.0	17.2	17.2	14.8	17.2	11.8	12.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



REPORT NUMBER: P196227

CATALOG NUMBER: NAV-AF-03-D-UNV-SLR-600

CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°	185°
0°	3676.1	3676.1	3676.1	3676.1	3676.1	3676.1	3676.1	3676.1	3676.1	3676.1	3676.1
2.5°	3031.9	3016.3	3005.3	2999.8	3078.8	3111.6	3149.2	3203.1	3239.9	3224.2	3274.3
5°	2264.2	2275.1	2300.1	2339.2	2449.5	2501.8	2535.5	2580.0	2612.1	2580.0	2633.2
7.5°	1548.0	1564.4	1617.6	1698.1	1831.0	1889.7	1901.4	1902.2	1895.1	1842.7	1878.8
10°	1139.9	1107.0	1118.8	1176.6	1295.5	1347.8	1353.4	1339.2	1336.9	1315.8	1356.4
12.5°	883.4	838.1	811.5	820.9	910.0	953.1	960.0	967.9	999.9	1010.1	1060.2
15°	659.1	635.7	616.1	607.4	666.1	699.7	703.7	722.4	756.1	765.4	808.4
17.5°	463.6	469.8	480.1	484.0	526.2	548.1	541.8	541.8	547.3	544.9	569.2
20°	354.1	366.6	386.3	405.0	443.2	455.8	440.2	420.6	408.2	401.8	407.3
22.5°	312.7	321.3	333.8	358.0	390.2	396.4	376.0	360.4	348.7	342.5	343.2
25°	290.0	298.7	308.8	328.4	355.7	358.9	340.1	329.9	320.6	314.3	312.7
27.5°	270.5	276.0	282.2	294.7	322.8	324.5	311.9	305.7	299.4	294.7	293.2
30°	252.6	254.9	257.2	269.8	290.8	293.2	286.9	283.8	281.4	278.3	278.3
32.5°	229.0	232.2	236.1	247.0	267.4	270.5	266.6	264.2	260.3	258.8	256.5
35°	200.9	208.8	217.4	230.7	252.6	254.1	249.4	242.3	233.0	230.7	229.0
37.5°	189.2	190.8	201.7	217.4	240.0	241.6	235.3	223.6	216.6	217.4	218.9
40°	181.4	183.7	190.0	205.6	228.3	230.7	225.2	216.6	209.5	210.3	212.7
42.5°	175.1	178.3	182.2	192.3	215.0	219.7	218.1	210.3	203.3	204.8	208.0
45°	172.0	174.3	174.3	181.4	203.3	210.3	211.1	204.8	199.4	200.9	204.8
47.5°	170.4	170.4	168.1	173.6	195.5	202.4	204.1	200.9	197.8	199.4	203.3
50°	168.1	165.0	162.6	167.4	189.2	195.5	197.0	194.7	196.2	199.4	201.7
52.5°	161.0	157.9	157.9	161.0	182.9	189.2	190.0	188.4	191.5	195.5	199.4
55°	152.4	152.4	153.2	156.4	179.8	184.5	183.7	182.2	185.3	190.0	193.8
57.5°	144.6	143.8	147.7	151.7	175.9	179.0	177.5	177.5	179.8	183.7	187.6
60°	139.9	136.1	139.1	145.5	172.0	175.1	172.8	172.0	175.9	179.0	182.2
62.5°	135.2	131.3	133.7	139.9	166.5	168.9	167.4	167.4	171.2	173.6	176.7
65°	128.2	126.6	128.2	134.5	161.8	162.6	162.6	163.4	166.5	168.1	171.2
67.5°	121.9	121.9	122.8	129.0	157.9	156.4	156.4	160.3	161.0	162.6	165.7
70°	114.2	115.7	115.7	123.6	154.8	149.4	150.1	153.2	154.8	156.4	157.1
72.5°	105.6	106.3	107.9	118.0	150.1	142.3	143.1	145.5	146.2	148.5	149.4
75°	96.2	97.0	99.3	112.6	147.0	135.2	133.7	135.2	136.8	138.4	137.6
77.5°	85.2	86.7	89.1	109.5	136.8	133.7	121.9	123.6	125.1	125.1	124.3
80°	71.9	74.3	78.2	104.8	115.7	129.0	108.6	109.5	110.3	110.3	108.6
82.5°	53.9	58.6	64.1	86.7	90.7	110.3	93.8	95.3	93.0	91.5	90.7
85°	35.2	39.1	47.0	60.1	66.5	86.7	77.4	78.2	73.4	72.7	72.7
87.5°	14.1	14.8	21.1	30.5	39.9	53.9	55.5	57.1	53.2	53.2	54.7
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



REPORT NUMBER: P196227

CATALOG NUMBER: NAV-AF-03-D-UNV-SLR-600

CANDELA DISTRIBUTION (continued):

	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°	285°
0°	3676.1	3676.1	3676.1	3676.1	3676.1	3676.1	3676.1	3676.1	3676.1	3676.1	3676.1
2.5°	3350.1	3428.3	3518.2	3609.7	3684.7	3781.6	3875.4	3975.6	4026.3	4056.1	4139.8
5°	2716.0	2823.1	2950.6	3093.6	3212.5	3415.7	3634.6	3878.6	3995.9	4111.5	4330.5
7.5°	1942.8	2047.5	2196.2	2381.4	2550.3	2818.4	3106.9	3436.9	3599.5	3787.2	4146.0
10°	1442.5	1553.5	1688.0	1845.1	2011.6	2290.7	2614.4	2985.0	3164.0	3375.9	3784.0
12.5°	1169.6	1299.4	1438.6	1579.2	1722.3	1910.0	2249.3	2661.3	2853.6	3067.1	3476.0
15°	912.4	1051.6	1201.7	1354.9	1497.2	1706.7	2053.1	2540.1	2759.8	2966.3	3300.9
17.5°	645.8	777.1	946.0	1132.1	1338.4	1586.3	2010.8	2593.3	2859.9	3075.7	3300.0
20°	440.2	530.8	699.7	920.2	1175.1	1489.4	2026.5	2780.2	3113.2	3350.1	3435.3
22.5°	351.8	394.9	508.9	733.4	1034.3	1419.0	2090.6	3036.6	3476.7	3765.3	3681.6
25°	319.8	344.0	403.5	579.3	909.3	1372.1	2215.7	3375.1	3884.0	4176.5	3977.8
27.5°	300.2	321.3	359.7	476.1	801.4	1341.6	2374.4	3773.9	4343.0	4583.0	4286.7
30°	287.8	308.8	344.0	427.7	720.1	1296.3	2513.6	4138.1	4709.7	4865.3	4453.2
32.5°	263.5	279.9	308.8	383.1	659.1	1243.1	2634.0	4464.2	5056.0	5107.6	4653.4
35°	238.4	255.6	284.6	347.1	623.1	1201.7	2697.3	4753.4	5399.2	5350.0	4852.0
37.5°	229.0	243.2	269.8	321.3	603.5	1174.2	2721.6	5038.0	5767.5	5618.1	4990.4
40°	222.8	235.3	258.8	304.1	598.1	1148.5	2716.0	5308.6	6124.8	5895.7	5099.0
42.5°	218.1	229.0	250.9	292.4	583.3	1124.2	2698.0	5542.3	6410.9	6134.9	5203.0
45°	214.2	226.0	247.9	298.7	555.9	1097.6	2687.1	5755.7	6630.6	6336.7	5342.2
47.5°	212.7	226.0	248.6	297.1	526.2	1068.0	2726.2	5992.7	6822.2	6506.3	5527.4
50°	210.3	225.2	265.9	283.1	485.5	1031.2	2858.3	6274.9	7023.1	6697.1	5767.5
52.5°	206.4	224.3	283.8	272.1	433.1	980.4	3072.5	6673.6	7370.3	7068.4	6122.5
55°	201.7	226.0	271.3	254.9	377.6	914.7	3286.7	7220.1	7933.1	7667.3	6632.2
57.5°	196.2	223.6	256.5	239.3	331.5	831.9	3449.4	7668.0	8397.5	8285.0	7258.4
60°	192.3	229.0	230.7	229.9	301.8	752.9	3465.0	7639.2	8531.2	8686.0	7871.4
62.5°	187.6	233.7	210.3	222.8	286.9	679.4	3271.9	7166.2	8305.2	8634.4	8370.9
65°	181.4	204.1	199.4	216.6	286.9	640.3	2822.3	6378.8	7680.6	8146.6	8642.2
67.5°	175.1	185.3	191.5	208.0	293.2	603.5	2268.1	5380.5	6695.5	7359.3	8337.4
70°	166.5	175.1	182.9	200.2	290.0	577.8	1784.8	4312.6	5510.2	6270.2	7493.7
72.5°	158.7	165.0	172.8	188.4	290.0	566.0	1433.9	3382.9	4207.0	4847.3	6207.7
75°	147.0	152.4	159.5	176.7	284.6	517.6	1076.6	2710.6	3078.1	3479.1	4898.1
77.5°	135.2	139.1	144.6	161.8	256.5	432.3	761.5	2099.2	2280.6	2502.6	3818.4
80°	120.4	123.6	127.5	144.6	212.7	335.4	495.7	1641.8	1705.2	1812.3	2512.0
82.5°	103.2	107.9	108.6	124.3	171.2	243.2	294.7	1125.0	1124.2	1281.5	1772.4
85°	84.4	86.7	88.4	97.7	126.6	161.8	193.8	614.5	548.1	767.7	1539.4
87.5°	63.3	61.0	63.3	65.7	83.7	95.3	103.9	113.3	68.0	139.1	895.2
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



REPORT NUMBER: P196227

CATALOG NUMBER: NAV-AF-03-D-UNV-SLR-600

CANDELA DISTRIBUTION (continued):

	295°	305°	315°	325°	335°	345°	355°	360°
0°	3676.1	3676.1	3676.1	3676.1	3676.1	3676.1	3676.1	3676.1
2.5°	4184.3	4230.4	4203.1	4170.3	4088.1	3967.7	3875.4	3794.9
5°	4482.2	4567.4	4529.8	4407.9	4195.2	3953.7	3699.6	3544.7
7.5°	4444.6	4613.5	4598.7	4395.4	4090.5	3734.8	3377.5	3173.4
10°	4144.4	4381.3	4422.0	4214.0	3891.1	3493.2	3079.6	2848.9
12.5°	3817.7	4017.0	4099.9	4020.9	3716.8	3312.5	2891.2	2660.5
15°	3544.0	3644.9	3726.9	3777.8	3589.3	3248.5	2858.3	2620.7
17.5°	3341.5	3321.9	3390.8	3512.7	3520.5	3333.7	3006.9	2741.1
20°	3243.8	3090.5	3130.4	3301.6	3501.8	3550.3	3303.2	2988.9
22.5°	3238.3	2999.1	3006.9	3191.4	3555.7	3845.8	3673.0	3314.9
25°	3322.7	2988.9	2995.9	3179.6	3651.1	4143.7	4100.6	3683.1
27.5°	3466.6	3032.6	3028.0	3231.3	3778.6	4392.2	4532.2	4133.4
30°	3622.2	3096.0	3084.3	3314.2	3903.6	4545.5	4838.7	4472.8
32.5°	3816.0	3208.6	3168.0	3435.3	4027.2	4692.5	5100.6	4790.2
35°	4000.6	3373.6	3314.9	3608.9	4159.3	4855.8	5393.8	5141.2
37.5°	4189.0	3619.8	3587.0	3859.1	4346.1	5033.3	5729.1	5539.2
40°	4430.6	3970.1	3954.4	4222.6	4595.5	5227.3	6105.2	5953.6
42.5°	4690.9	4342.2	4328.9	4640.1	4905.2	5421.9	6427.3	6309.3
45°	4956.0	4793.3	4796.4	5085.7	5231.2	5605.7	6680.7	6593.8
47.5°	5268.7	5286.7	5398.4	5547.8	5548.6	5810.5	6905.0	6858.9
50°	5665.8	5882.4	6088.8	6112.2	5869.1	6081.0	7179.5	7162.3
52.5°	6115.4	6569.6	6809.7	6735.4	6181.8	6416.4	7585.2	7584.5
55°	6649.4	7288.1	7514.1	7387.4	6556.3	6853.5	8115.3	8080.9
57.5°	7202.9	7979.2	8161.4	7996.4	7024.6	7362.4	8646.9	8464.7
60°	7801.0	8574.2	8759.5	8511.7	7550.0	7869.8	8998.7	8572.6
62.5°	8192.7	8922.1	9055.1	8817.3	8020.7	8386.6	9112.1	8443.6
65°	8213.0	8690.7	8725.9	8641.5	8220.8	8835.3	8948.0	8061.4
67.5°	7654.7	7683.0	7729.1	7819.7	7793.1	8635.2	8314.6	7168.5
70°	6461.0	6085.6	6237.3	6324.9	6521.9	7680.6	7144.3	5830.0
72.5°	4940.3	4392.2	4564.3	4534.5	4944.2	6299.9	5465.7	4490.8
75°	3555.7	2995.2	3008.4	3010.0	3552.6	5028.6	3726.9	3189.0
77.5°	2416.6	2119.6	2163.3	2135.9	2377.5	3939.6	2683.2	2298.6
80°	1652.8	1644.9	1654.3	1590.2	1585.6	2546.4	1986.6	1833.3
82.5°	1225.9	1132.8	1119.5	1051.6	1215.0	1946.8	1508.1	1317.4
85°	967.1	627.1	544.9	657.6	1052.3	1791.2	919.4	675.5
87.5°	409.7	246.2	149.4	295.5	584.8	1312.7	254.9	131.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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