

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: P196226

Luminaire Tested: **NAV-AF-02-D-UNV-SLR-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196226
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-SLR-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 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: 7250.7 lumens
Efficiency: N/A
Efficacy: 109.9 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B1 - U0 - G2

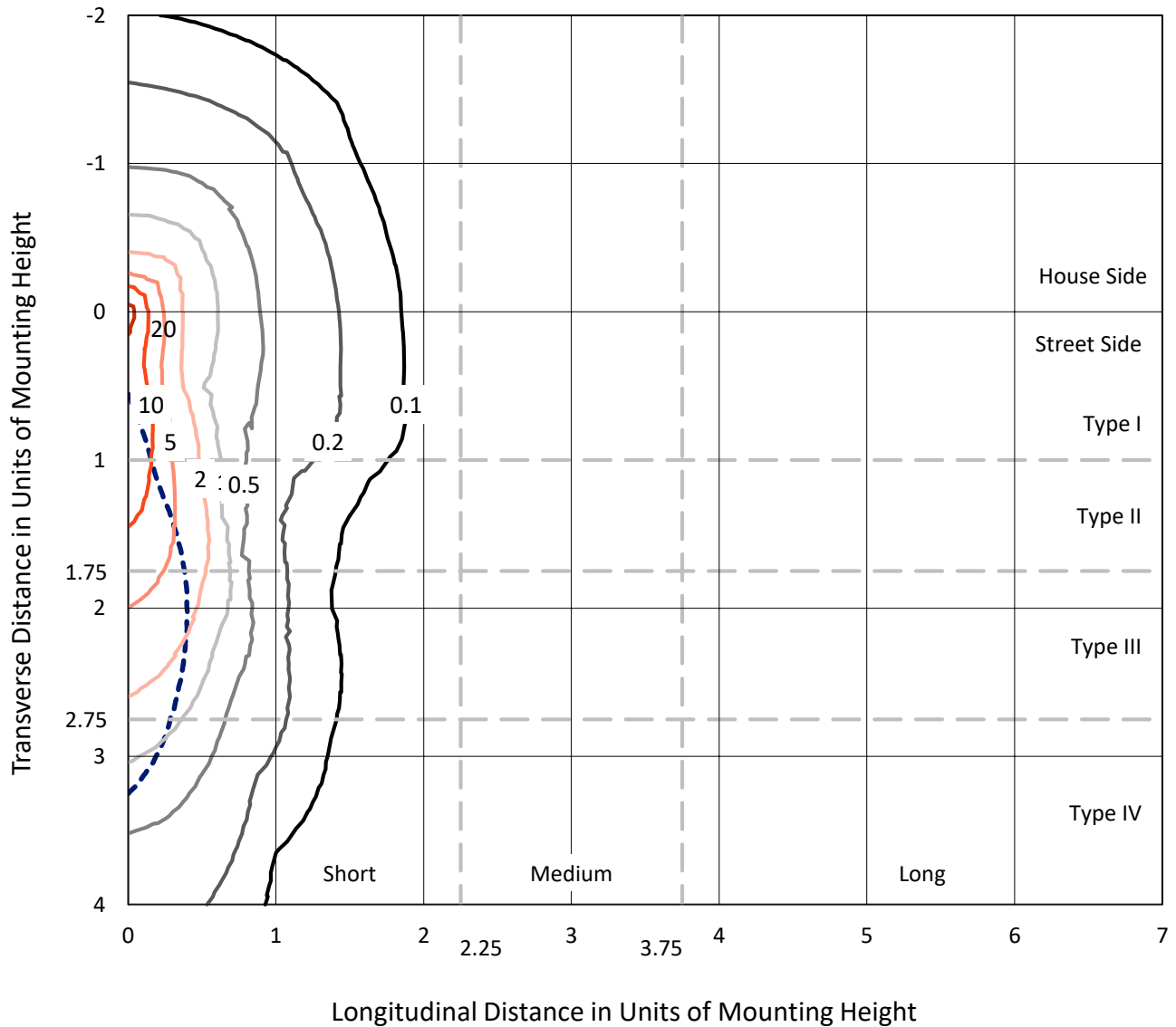
Input Watts (W): 66
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



REPORT NUMBER: P196226
 CATALOG NUMBER: NAV-AF-02-D-UNV-SLR-600

Iso-Footcandle Lines of Horizontal Illumination

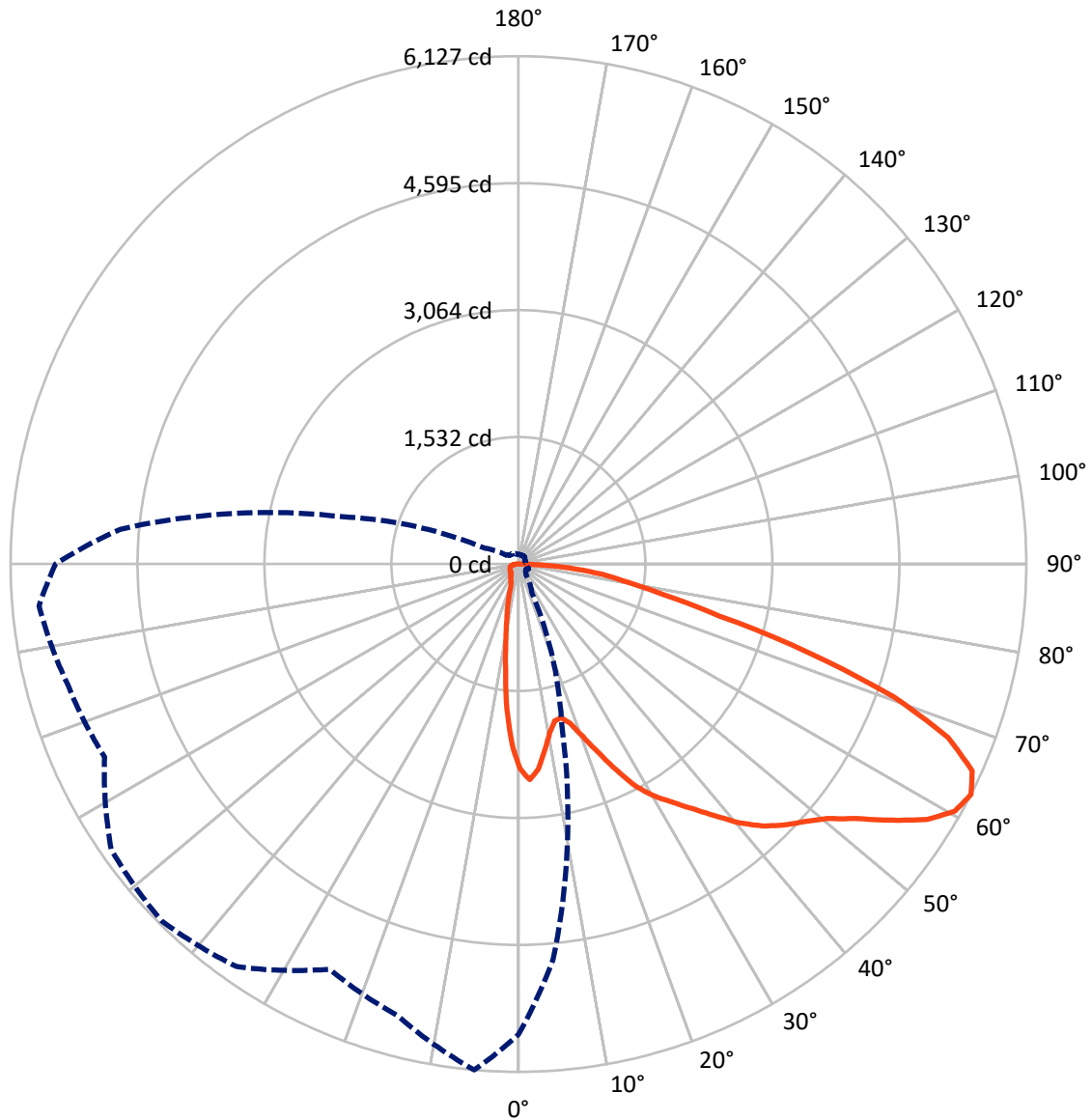
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 24.7 fc
 Type IV - Short - Non-Cutoff

REPORT NUMBER: P196226
CATALOG NUMBER: NAV-AF-02-D-UNV-SLR-600

Luminous Intensity Polar Plot



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

REPORT NUMBER: P196226

CATALOG NUMBER: NAV-AF-02-D-UNV-SLR-600

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1284.5	0.0	1284.5
	% Fixture	17.7	0.0	17.7
Street Side	Lumens	5966.2	0.0	5966.2
	% Fixture	82.3	0.0	82.3
Total	Lumens	7250.7	0.0	7250.7
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	179.8	2.5
10°-20°	328.3	4.5
20°-30°	472.2	6.5
30°-40°	723.3	10.0
40°-50°	1057.5	14.6
50°-60°	1538.6	21.2
60°-70°	1782.7	24.6
70°-80°	929.3	12.8
80°-90°	238.9	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°	7250.7	100.0
0°-180°	7250.7	100.0



REPORT NUMBER: P196226

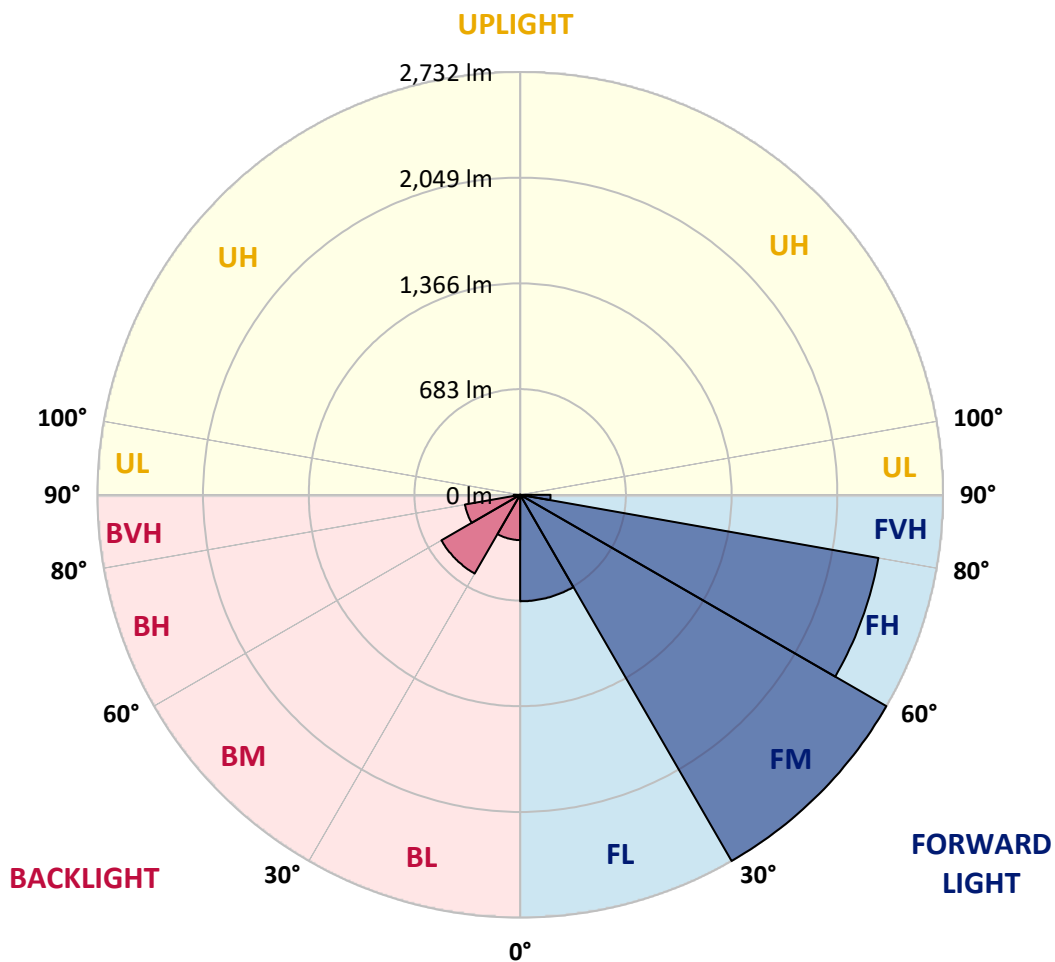
CATALOG NUMBER: NAV-AF-02-D-UNV-SLR-600

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	688.1	9.5			
FM	(30°-60°)	2731.7	37.7			
FH	(60°-80°)	2349.8	32.4			G2/5000
FVH	(80°-90°)	196.5	2.7			G2/225
BL	(0°-30°)	292.2	4.0	B1/500		
BM	(30°-60°)	587.7	8.1	B1/1000		
BH	(60°-80°)	362.2	5.0	B1/500		G1/500
BVH	(80°-90°)	42.4	0.6			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B1-U0-G2

Type IV Short





REPORT NUMBER: P196226

CATALOG NUMBER: NAV-AF-02-D-UNV-SLR-600

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	2471.9	2471.9	2471.9	2471.9	2471.9	2471.9	2471.9	2471.9	2471.9	2471.9	2471.9
2.5°	2551.9	2516.0	2433.5	2361.0	2270.5	2202.7	2120.2	2076.6	2044.5	2023.0	2005.6
5°	2383.6	2297.3	2139.6	2001.4	1852.1	1744.3	1618.1	1549.3	1506.7	1483.6	1473.0
7.5°	2133.9	2019.8	1815.8	1630.3	1443.6	1309.1	1213.3	1111.3	1057.2	1022.0	1010.4
10°	1915.7	1786.9	1543.5	1334.7	1190.7	1095.1	1013.0	919.4	850.1	789.6	767.0
12.5°	1789.0	1639.2	1361.5	1172.9	1051.9	949.4	862.7	761.8	688.7	625.6	601.4
15°	1762.2	1595.0	1285.3	1069.8	921.6	798.0	694.0	584.1	512.6	460.5	443.7
17.5°	1843.2	1637.0	1253.3	975.7	797.0	646.1	517.8	400.1	340.6	312.3	305.5
20°	2009.8	1729.6	1238.1	891.1	676.1	497.4	358.0	271.8	242.3	233.9	233.4
22.5°	2229.0	1880.0	1254.9	821.7	562.5	366.9	262.3	223.4	211.3	206.6	206.6
25°	2476.7	2083.4	1299.6	768.5	462.6	285.5	226.1	205.0	195.1	190.3	190.9
27.5°	2779.5	2331.0	1360.5	719.7	391.2	250.2	211.3	193.4	183.5	178.7	179.2
30°	3007.6	2543.9	1413.1	675.0	354.4	236.0	203.5	186.6	175.5	168.8	168.3
32.5°	3221.1	2731.6	1455.7	642.9	333.3	210.8	184.0	171.3	161.9	154.1	152.4
35°	3457.1	2908.2	1475.7	641.9	319.7	190.3	168.3	153.0	143.5	134.6	133.0
37.5°	3724.7	3124.3	1492.5	648.2	312.3	177.2	160.9	146.2	138.3	129.3	127.3
40°	4003.3	3335.6	1505.7	653.5	311.2	168.3	155.1	142.0	134.0	124.6	122.4
42.5°	4242.5	3522.8	1523.5	651.3	303.8	166.6	151.4	138.3	130.9	121.4	118.8
45°	4433.9	3671.6	1551.4	650.8	292.9	170.3	150.4	137.2	128.3	118.3	116.2
47.5°	4612.1	3839.2	1610.2	648.8	280.7	169.3	156.1	136.2	127.3	117.2	115.7
50°	4816.1	4064.8	1710.7	633.0	263.9	161.9	166.6	135.1	124.6	115.7	114.1
52.5°	5099.9	4395.0	1859.4	604.6	240.8	154.1	168.3	134.6	120.4	112.5	110.4
55°	5433.8	4748.7	2019.8	563.5	210.3	140.3	159.8	132.5	116.2	107.8	104.6
57.5°	5691.9	5010.0	2131.7	504.7	180.3	132.5	142.5	127.8	110.9	102.5	99.8
60°	5764.4	5021.6	2151.8	434.2	165.1	127.3	122.4	139.3	106.7	97.8	95.1
62.5°	5677.7	4791.9	2021.4	384.8	159.8	121.9	111.5	133.0	102.5	93.6	90.9
65°	5420.6	4403.9	1729.6	377.5	165.1	117.2	105.7	106.2	98.3	89.4	86.7
67.5°	4820.2	3833.0	1362.7	382.2	171.3	112.5	101.5	96.8	93.6	85.7	82.6
70°	3920.3	3085.9	1073.5	390.6	177.2	106.2	96.2	90.4	87.8	79.4	77.8
72.5°	3019.6	2469.8	846.9	384.8	182.9	99.8	88.9	84.1	80.9	73.0	71.5
75°	2144.4	1962.5	622.5	330.1	167.7	90.9	80.4	76.2	73.6	65.2	64.7
77.5°	1545.6	1469.9	433.2	248.2	132.5	79.9	71.0	67.3	65.7	56.3	56.3
80°	1232.8	1118.7	259.2	161.9	96.8	66.3	59.4	57.8	56.3	46.7	47.4
82.5°	885.9	775.9	165.6	101.0	71.0	50.4	46.2	45.7	43.1	34.7	34.7
85°	454.2	396.4	106.2	67.8	49.9	32.6	30.5	29.5	27.8	21.6	21.6
87.5°	88.3	121.4	58.9	33.1	24.1	11.6	11.6	10.0	11.6	7.9	8.4
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: P196226

CATALOG NUMBER: NAV-AF-02-D-UNV-SLR-600

CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°	185°
0°	2471.9	2471.9	2471.9	2471.9	2471.9	2471.9	2471.9	2471.9	2471.9	2471.9	2471.9
2.5°	2038.7	2028.2	2020.8	2017.2	2070.2	2092.3	2117.6	2153.8	2178.6	2168.0	2201.7
5°	1522.5	1529.8	1546.6	1572.9	1647.1	1682.2	1704.8	1734.8	1756.4	1734.8	1770.6
7.5°	1041.0	1051.9	1087.7	1141.8	1231.2	1270.6	1278.5	1279.1	1274.3	1239.1	1263.2
10°	766.5	744.4	752.3	791.2	871.1	906.3	910.0	900.5	899.0	884.8	912.1
12.5°	594.0	563.5	545.6	552.0	611.9	640.9	645.6	650.8	672.4	679.2	712.9
15°	443.1	427.4	414.3	408.5	448.0	470.6	473.1	485.8	508.4	514.6	543.6
17.5°	311.8	316.0	322.7	325.4	353.8	368.6	364.3	364.3	368.0	366.4	382.7
20°	238.1	246.5	259.7	272.3	298.1	306.5	295.9	282.8	274.5	270.3	273.9
22.5°	210.3	216.0	224.4	240.8	262.3	266.6	252.9	242.3	234.5	230.3	230.8
25°	195.1	200.8	207.7	220.8	239.2	241.3	228.7	221.9	215.5	211.3	210.3
27.5°	181.9	185.6	189.8	198.1	217.1	218.2	209.8	205.5	201.3	198.1	197.1
30°	169.8	171.3	173.0	181.4	195.6	197.1	192.9	190.9	189.2	187.2	187.2
32.5°	154.1	156.1	158.8	166.1	179.8	181.9	179.2	177.7	175.0	174.0	172.5
35°	135.1	140.3	146.2	155.1	169.8	170.8	167.7	163.0	156.6	155.1	154.1
37.5°	127.3	128.3	135.6	146.2	161.4	162.4	158.3	150.4	145.7	146.2	147.2
40°	121.9	123.6	127.8	138.3	153.5	155.1	151.4	145.7	140.9	141.4	143.0
42.5°	117.7	119.9	122.4	129.3	144.5	147.7	146.7	141.4	136.7	137.7	139.8
45°	115.7	117.2	117.2	121.9	136.7	141.4	142.0	137.7	134.0	135.1	137.7
47.5°	114.6	114.6	113.0	116.7	131.4	136.2	137.2	135.1	133.0	134.0	136.7
50°	113.0	110.9	109.4	112.5	127.3	131.4	132.5	130.9	132.0	134.0	135.6
52.5°	108.3	106.2	106.2	108.3	123.1	127.3	127.8	126.7	128.8	131.4	134.0
55°	102.5	102.5	103.0	105.2	120.9	124.1	123.6	122.4	124.6	127.8	130.4
57.5°	97.3	96.8	99.3	102.0	118.3	120.4	119.4	119.4	120.9	123.6	126.1
60°	94.1	91.5	93.6	97.8	115.7	117.7	116.2	115.7	118.3	120.4	122.4
62.5°	90.9	88.3	89.9	94.1	112.0	113.5	112.5	112.5	115.1	116.7	118.8
65°	86.2	85.2	86.2	90.4	108.8	109.4	109.4	109.9	112.0	113.0	115.1
67.5°	82.0	82.0	82.6	86.7	106.2	105.2	105.2	107.8	108.3	109.4	111.5
70°	76.7	77.8	77.8	83.1	104.1	100.5	101.0	103.0	104.1	105.2	105.7
72.5°	71.0	71.5	72.5	79.4	101.0	95.6	96.2	97.8	98.3	99.8	100.5
75°	64.7	65.2	66.8	75.7	98.8	90.9	89.9	90.9	92.0	93.1	92.5
77.5°	57.3	58.3	59.9	73.6	92.0	89.9	82.0	83.1	84.1	84.1	83.6
80°	48.4	49.9	52.6	70.5	77.8	86.7	73.0	73.6	74.2	74.2	73.0
82.5°	36.3	39.4	43.1	58.3	61.0	74.2	63.1	64.1	62.6	61.5	61.0
85°	23.6	26.3	31.5	40.5	44.7	58.3	52.1	52.6	49.4	48.9	48.9
87.5°	9.5	10.0	14.2	20.5	26.8	36.3	37.3	38.4	35.7	35.7	36.8
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: P196226

CATALOG NUMBER: NAV-AF-02-D-UNV-SLR-600

CANDELA DISTRIBUTION (continued):

	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°	285°
0°	2471.9	2471.9	2471.9	2471.9	2471.9	2471.9	2471.9	2471.9	2471.9	2471.9	2471.9
2.5°	2252.6	2305.2	2365.7	2427.3	2477.7	2542.9	2606.0	2673.3	2707.4	2727.4	2783.7
5°	1826.3	1898.4	1984.0	2080.3	2160.2	2296.8	2444.0	2608.0	2686.9	2764.7	2911.9
7.5°	1306.4	1376.9	1476.7	1601.3	1714.9	1895.2	2089.2	2311.1	2420.4	2546.5	2787.8
10°	970.0	1044.6	1135.0	1240.6	1352.6	1540.4	1757.9	2007.1	2127.5	2270.0	2544.5
12.5°	786.4	873.7	967.3	1061.9	1158.2	1284.3	1512.4	1789.6	1918.9	2062.4	2337.3
15°	613.5	707.1	808.0	911.0	1006.8	1147.6	1380.5	1708.0	1855.7	1994.5	2219.6
17.5°	434.2	522.5	636.1	761.3	900.0	1066.6	1352.1	1743.8	1923.0	2068.2	2219.0
20°	295.9	357.0	470.6	618.8	790.1	1001.5	1362.7	1869.4	2093.4	2252.6	2310.0
22.5°	236.6	265.5	342.3	493.2	695.5	954.2	1405.7	2041.9	2337.9	2531.8	2475.5
25°	215.0	231.3	271.3	389.5	611.4	922.6	1489.8	2269.5	2611.7	2808.3	2674.8
27.5°	201.8	216.0	241.8	320.2	538.9	902.1	1596.6	2537.6	2920.3	3081.7	2882.5
30°	193.4	207.7	231.3	287.6	484.2	871.7	1690.1	2782.6	3166.9	3271.5	2994.5
32.5°	177.2	188.2	207.7	257.6	443.1	835.9	1771.1	3001.8	3399.8	3434.5	3129.0
35°	160.3	172.0	191.4	233.4	419.0	808.0	1813.7	3196.3	3630.6	3597.4	3262.6
37.5°	154.1	163.5	181.4	216.0	405.8	789.6	1830.0	3387.7	3878.2	3777.8	3355.6
40°	149.9	158.3	174.0	204.5	402.1	772.2	1826.3	3569.6	4118.4	3964.4	3428.7
42.5°	146.7	154.1	168.8	196.6	392.2	756.0	1814.2	3726.8	4310.8	4125.3	3498.6
45°	144.0	151.9	166.6	200.8	373.8	738.1	1806.8	3870.3	4458.5	4260.9	3592.2
47.5°	143.0	151.9	167.2	199.8	353.8	718.1	1833.1	4029.6	4587.3	4375.0	3716.8
50°	141.4	151.4	178.7	190.3	326.4	693.5	1922.0	4219.4	4722.5	4503.2	3878.2
52.5°	138.8	150.9	190.9	182.9	291.2	659.3	2066.1	4487.5	4955.9	4752.9	4116.9
55°	135.6	151.9	182.4	171.3	253.9	615.1	2210.1	4854.9	5334.4	5155.7	4459.7
57.5°	132.0	150.4	172.5	160.9	222.9	559.3	2319.4	5156.2	5646.7	5571.0	4880.7
60°	129.3	154.1	155.1	154.6	203.0	506.3	2330.0	5136.7	5736.6	5840.6	5292.8
62.5°	126.1	157.2	141.4	149.9	192.9	456.8	2200.1	4818.7	5584.6	5806.0	5628.8
65°	121.9	137.2	134.0	145.7	192.9	430.6	1897.8	4289.3	5164.6	5477.9	5811.2
67.5°	117.7	124.6	128.8	139.8	197.1	405.8	1525.1	3618.0	4502.2	4948.5	5606.2
70°	112.0	117.7	123.1	134.6	195.1	388.5	1200.2	2899.9	3705.2	4216.2	5039.0
72.5°	106.7	110.9	116.2	126.7	195.1	380.6	964.1	2274.7	2828.9	3259.4	4174.2
75°	98.8	102.5	107.2	118.8	191.4	348.0	723.9	1822.7	2069.7	2339.4	3293.6
77.5°	90.9	93.6	97.3	108.8	172.5	290.7	512.1	1411.6	1533.5	1682.9	2567.6
80°	80.9	83.1	85.7	97.3	143.0	225.6	333.3	1104.0	1146.6	1218.6	1689.1
82.5°	69.4	72.5	73.0	83.6	115.1	163.5	198.1	756.5	756.0	861.6	1191.8
85°	56.8	58.3	59.4	65.7	85.2	108.8	130.4	413.2	368.6	516.3	1035.1
87.5°	42.6	41.0	42.6	44.2	56.3	64.1	70.0	76.2	45.7	93.6	601.9
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: P196226

CATALOG NUMBER: NAV-AF-02-D-UNV-SLR-600

CANDELA DISTRIBUTION (continued):

	295°	305°	315°	325°	335°	345°	355°	360°
0°	2471.9	2471.9	2471.9	2471.9	2471.9	2471.9	2471.9	2471.9
2.5°	2813.6	2844.6	2826.2	2804.1	2749.0	2668.0	2606.0	2551.9
5°	3013.9	3071.2	3045.9	2964.0	2821.0	2658.5	2487.7	2383.6
7.5°	2988.7	3102.2	3092.3	2955.5	2750.5	2511.3	2271.1	2133.9
10°	2786.8	2946.1	2973.4	2833.6	2616.5	2348.9	2070.8	1915.7
12.5°	2567.1	2701.1	2756.9	2703.8	2499.3	2227.5	1944.1	1789.0
15°	2383.1	2450.9	2506.0	2540.2	2413.6	2184.3	1922.0	1762.2
17.5°	2246.9	2233.7	2280.1	2362.0	2367.3	2241.6	2021.9	1843.2
20°	2181.1	2078.1	2104.9	2220.1	2354.6	2387.3	2221.1	2009.8
22.5°	2177.5	2016.6	2021.9	2145.9	2390.9	2586.0	2469.8	2229.0
25°	2234.2	2009.8	2014.5	2138.1	2455.1	2786.3	2757.4	2476.7
27.5°	2331.0	2039.3	2036.1	2172.7	2540.8	2953.5	3047.6	2779.5
30°	2435.6	2081.8	2073.9	2228.5	2624.9	3056.5	3253.6	3007.6
32.5°	2566.0	2157.5	2130.2	2310.0	2708.0	3155.3	3429.7	3221.1
35°	2690.1	2268.5	2229.0	2426.6	2796.7	3265.2	3626.9	3457.1
37.5°	2816.8	2434.0	2412.0	2594.9	2922.5	3384.5	3852.4	3724.7
40°	2979.2	2669.6	2659.1	2839.4	3090.1	3515.0	4105.3	4003.3
42.5°	3154.3	2919.8	2910.9	3120.1	3298.3	3645.8	4321.9	4242.5
45°	3332.5	3223.1	3225.3	3419.7	3517.5	3769.4	4492.2	4433.9
47.5°	3542.8	3554.9	3630.0	3730.5	3731.0	3907.1	4643.1	4612.1
50°	3809.9	3955.4	4094.3	4110.0	3946.5	4089.0	4827.6	4816.1
52.5°	4112.2	4417.5	4578.9	4529.0	4156.8	4314.5	5100.4	5099.9
55°	4471.2	4900.7	5052.7	4967.4	4408.6	4608.4	5456.9	5433.8
57.5°	4843.4	5365.4	5487.9	5376.9	4723.5	4950.7	5814.4	5691.9
60°	5245.6	5765.5	5890.0	5723.4	5076.8	5291.8	6051.0	5764.4
62.5°	5508.9	5999.4	6088.8	5929.0	5393.3	5639.3	6127.2	5677.7
65°	5522.6	5843.8	5867.4	5810.7	5527.8	5941.1	6016.8	5420.6
67.5°	5147.3	5166.2	5197.2	5258.2	5240.3	5806.5	5590.9	4820.2
70°	4344.5	4092.1	4194.1	4253.0	4385.5	5164.6	4804.0	3920.3
72.5°	3321.9	2953.5	3069.2	3049.1	3324.6	4236.1	3675.3	3019.6
75°	2390.9	2014.0	2023.0	2024.0	2388.8	3381.4	2506.0	2144.4
77.5°	1625.0	1425.2	1454.6	1436.2	1598.7	2649.0	1804.3	1545.6
80°	1111.3	1106.1	1112.4	1069.3	1066.1	1712.2	1335.9	1232.8
82.5°	824.3	761.8	752.8	707.1	816.9	1309.1	1014.1	885.9
85°	650.3	421.7	366.4	442.1	707.6	1204.4	618.3	454.2
87.5°	275.5	165.6	100.5	198.8	393.2	882.7	171.3	88.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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