

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: P196231

Luminaire Tested: **NAV-AF-01-D-UNV-SLR-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196231
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-01-D-UNV-SLR-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(1) 70 CRI, 4000K, 800mA LIGHTSQUARE WITH 16 LEDS EACH AND SPILL LIGHT
ELIMINATOR RIGHT OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4460.1 lumens
Efficiency: N/A
Efficacy: 101.4 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B1 - U0 - G2

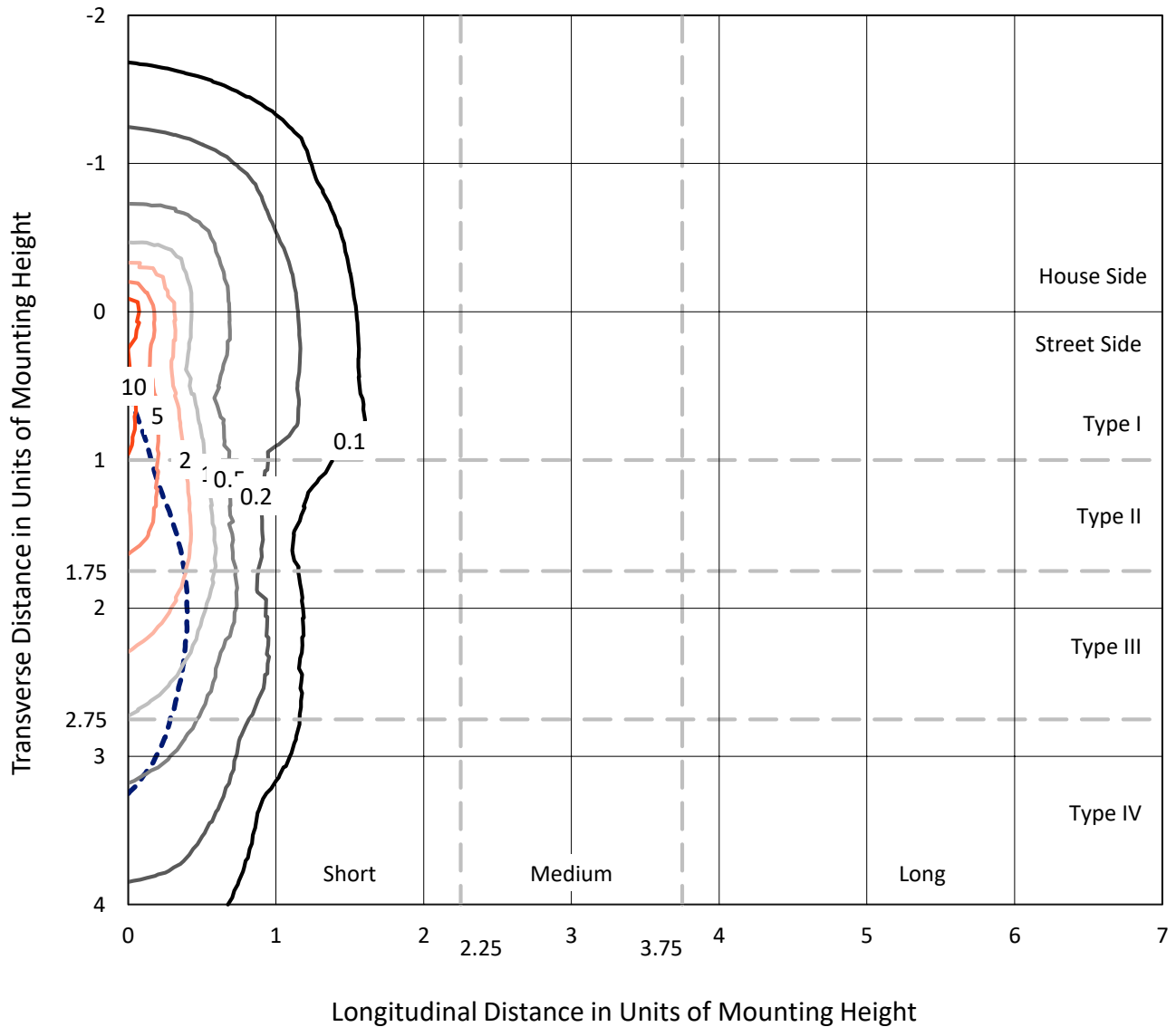
Input Watts (W): 44
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



REPORT NUMBER: P196231
 CATALOG NUMBER: NAV-AF-01-D-UNV-SLR-800

Iso-Footcandle Lines of Horizontal Illumination

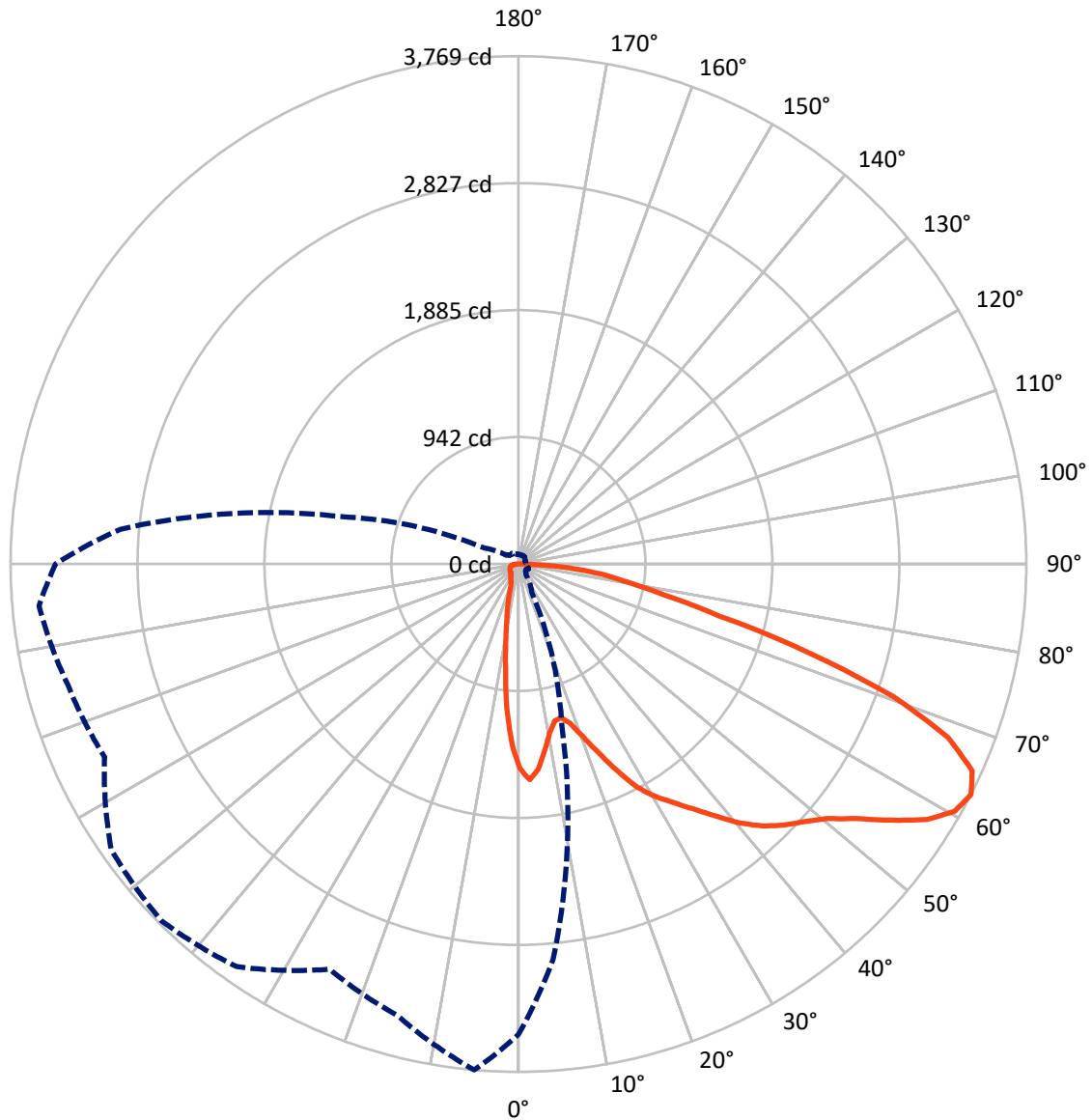
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 15.2 fc
 Type IV - Short - Non-Cutoff

REPORT NUMBER: P196231
CATALOG NUMBER: NAV-AF-01-D-UNV-SLR-800

Luminous Intensity Polar Plot



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

REPORT NUMBER: P196231

CATALOG NUMBER: NAV-AF-01-D-UNV-SLR-800

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	790.1	0.0	790.1
	% Fixture	17.7	0.0	17.7
Street Side	Lumens	3670.0	0.0	3670.0
	% Fixture	82.3	0.0	82.3
Total	Lumens	4460.1	0.0	4460.1
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	110.6	2.5
10°-20°	202.0	4.5
20°-30°	290.5	6.5
30°-40°	444.9	10.0
40°-50°	650.5	14.6
50°-60°	946.5	21.2
60°-70°	1096.6	24.6
70°-80°	571.6	12.8
80°-90°	146.9	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°	4460.1	100.0
0°-180°	4460.1	100.0



REPORT NUMBER: P196231

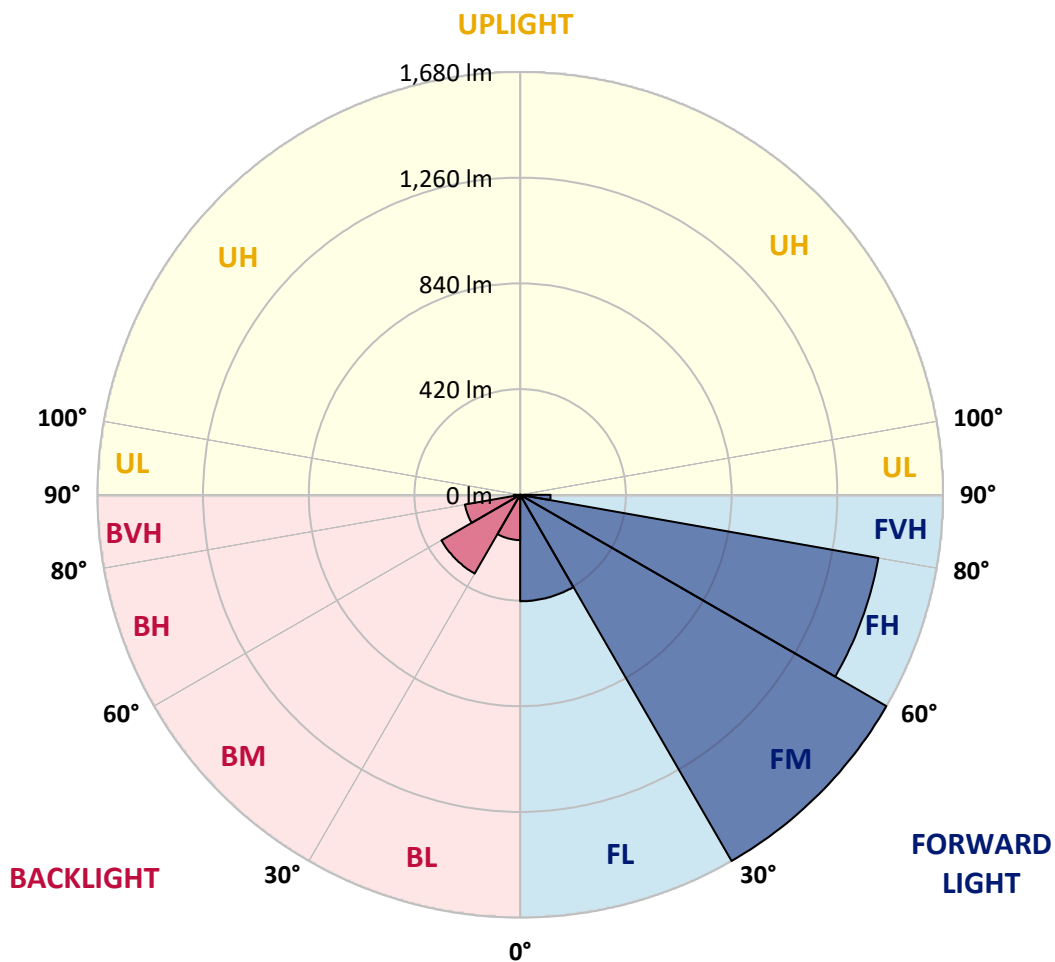
CATALOG NUMBER: NAV-AF-01-D-UNV-SLR-800

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	423.3	9.5			
FM	(30°-60°)	1680.3	37.7			
FH	(60°-80°)	1445.4	32.4			G1/1800
FVH	(80°-90°)	120.9	2.7			G2/225
BL	(0°-30°)	179.8	4.0	B1/500		
BM	(30°-60°)	361.5	8.1	B1/1000		
BH	(60°-80°)	222.8	5.0	B1/500		G1/500
BVH	(80°-90°)	26.1	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: P196231

CATALOG NUMBER: NAV-AF-01-D-UNV-SLR-800

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	1520.5	1520.5	1520.5	1520.5	1520.5	1520.5	1520.5	1520.5	1520.5	1520.5	1520.5
2.5°	1569.7	1547.7	1496.9	1452.3	1396.6	1355.0	1304.2	1277.4	1257.6	1244.3	1233.7
5°	1466.2	1413.2	1316.1	1231.1	1139.3	1073.0	995.3	953.0	926.8	912.6	906.1
7.5°	1312.5	1242.4	1117.0	1002.8	888.0	805.2	746.3	683.6	650.3	628.6	621.5
10°	1178.4	1099.2	949.4	821.0	732.4	673.6	623.2	565.6	522.9	485.7	471.8
12.5°	1100.5	1008.3	837.6	721.5	647.1	584.0	530.7	468.6	423.6	384.8	369.9
15°	1083.9	981.1	790.6	658.1	566.9	490.9	426.9	359.3	315.3	283.3	272.9
17.5°	1133.7	1007.0	770.9	600.2	490.2	397.4	318.5	246.1	209.5	192.1	187.9
20°	1236.2	1063.9	761.6	548.1	415.8	306.0	220.2	167.2	149.0	143.9	143.6
22.5°	1371.2	1156.4	771.9	505.4	346.1	225.8	161.3	137.5	130.0	127.1	127.1
25°	1523.5	1281.6	799.4	472.8	284.6	175.6	139.0	126.1	120.0	117.0	117.4
27.5°	1709.7	1433.9	836.9	442.7	240.6	154.0	130.0	119.0	112.8	110.0	110.3
30°	1850.0	1564.8	869.2	415.2	218.0	145.2	125.1	114.8	108.0	103.8	103.5
32.5°	1981.4	1680.3	895.4	395.5	205.0	129.7	113.1	105.5	99.6	94.7	93.8
35°	2126.5	1788.9	907.8	394.9	196.6	117.0	103.5	94.1	88.3	82.8	81.8
37.5°	2291.1	1921.8	918.1	398.7	192.1	108.9	98.9	89.9	85.0	79.6	78.3
40°	2462.5	2051.8	926.2	401.9	191.4	103.5	95.4	87.4	82.4	76.6	75.4
42.5°	2609.6	2166.9	937.1	400.7	186.9	102.5	93.1	85.0	80.5	74.7	73.0
45°	2727.4	2258.5	954.3	400.4	180.1	104.8	92.5	84.4	78.9	72.7	71.5
47.5°	2836.9	2361.6	990.5	399.1	172.7	104.1	96.1	83.8	78.3	72.1	71.1
50°	2962.5	2500.4	1052.3	389.3	162.3	99.6	102.5	83.1	76.6	71.1	70.2
52.5°	3137.1	2703.5	1143.8	371.8	148.1	94.7	103.5	82.8	74.1	69.3	67.9
55°	3342.4	2921.0	1242.4	346.7	129.3	86.3	98.3	81.5	71.5	66.3	64.3
57.5°	3501.3	3081.8	1311.3	310.5	110.9	81.5	87.7	78.6	68.2	63.0	61.5
60°	3545.9	3088.9	1323.6	267.1	101.6	78.3	75.4	85.7	65.7	60.1	58.5
62.5°	3492.5	2947.6	1243.4	236.7	98.3	75.0	68.5	81.8	63.0	57.6	56.0
65°	3334.3	2709.0	1063.9	232.2	101.6	72.1	65.0	65.4	60.5	54.9	53.4
67.5°	2965.0	2357.8	838.2	235.1	105.5	69.3	62.4	59.5	57.6	52.7	50.7
70°	2411.4	1898.2	660.3	240.3	108.9	65.4	59.2	55.6	54.0	48.8	47.9
72.5°	1857.5	1519.2	521.0	236.7	112.5	61.5	54.6	51.8	49.8	44.9	44.0
75°	1319.1	1207.2	382.9	203.1	103.1	56.0	49.5	46.9	45.3	40.1	39.8
77.5°	950.7	904.2	266.5	152.6	81.5	49.2	43.7	41.4	40.4	34.6	34.6
80°	758.3	688.1	159.4	99.6	59.5	40.7	36.5	35.6	34.6	28.7	29.2
82.5°	544.9	477.3	101.9	62.1	43.7	31.0	28.4	28.1	26.5	21.4	21.4
85°	279.4	243.9	65.4	41.7	30.7	20.0	18.7	18.1	17.2	13.3	13.3
87.5°	54.3	74.7	36.2	20.4	14.8	7.2	7.2	6.1	7.2	4.8	5.2
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: P196231

CATALOG NUMBER: NAV-AF-01-D-UNV-SLR-800

CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°	185°
0°	1520.5	1520.5	1520.5	1520.5	1520.5	1520.5	1520.5	1520.5	1520.5	1520.5	1520.5
2.5°	1254.0	1247.6	1243.1	1240.8	1273.5	1287.1	1302.5	1324.9	1340.1	1333.6	1354.3
5°	936.5	941.0	951.3	967.5	1013.1	1034.8	1048.7	1067.1	1080.4	1067.1	1089.1
7.5°	640.3	647.1	669.1	702.4	757.4	781.6	786.4	786.8	783.9	762.2	777.0
10°	471.5	457.9	462.8	486.7	535.8	557.5	559.8	553.9	553.0	544.2	561.1
12.5°	365.4	346.7	335.6	339.5	376.4	394.2	397.1	400.4	413.6	417.8	438.5
15°	272.6	262.9	254.8	251.2	275.5	289.4	291.0	298.8	312.7	316.6	334.4
17.5°	191.8	194.4	198.6	200.2	217.7	226.7	224.1	224.1	226.4	225.4	235.4
20°	146.5	151.7	159.8	167.6	183.3	188.5	182.1	174.0	168.8	166.2	168.5
22.5°	129.3	132.9	138.1	148.1	161.3	164.0	155.6	149.0	144.2	141.7	142.0
25°	120.0	123.6	127.8	135.8	147.1	148.4	140.7	136.5	132.6	130.0	129.3
27.5°	111.9	114.2	116.7	121.9	133.6	134.2	129.0	126.4	123.9	121.9	121.2
30°	104.4	105.5	106.4	111.6	120.3	121.2	118.7	117.4	116.4	115.1	115.1
32.5°	94.7	96.1	97.7	102.2	110.6	111.9	110.3	109.3	107.7	107.0	106.1
35°	83.1	86.3	89.9	95.4	104.4	105.1	103.1	100.2	96.4	95.4	94.7
37.5°	78.3	78.9	83.5	89.9	99.2	99.9	97.4	92.5	89.6	89.9	90.5
40°	75.0	76.0	78.6	85.0	94.4	95.4	93.1	89.6	86.6	87.0	88.0
42.5°	72.4	73.8	75.4	79.6	88.9	90.8	90.2	87.0	84.1	84.7	86.0
45°	71.1	72.1	72.1	75.0	84.1	87.0	87.4	84.7	82.4	83.1	84.7
47.5°	70.5	70.5	69.6	71.8	80.8	83.8	84.4	83.1	81.8	82.4	84.1
50°	69.6	68.2	67.3	69.3	78.3	80.8	81.5	80.5	81.1	82.4	83.5
52.5°	66.6	65.4	65.4	66.6	75.7	78.3	78.6	77.9	79.3	80.8	82.4
55°	63.0	63.0	63.4	64.7	74.4	76.3	76.0	75.4	76.6	78.6	80.2
57.5°	59.8	59.5	61.1	62.7	72.7	74.1	73.4	73.4	74.4	76.0	77.6
60°	57.9	56.3	57.6	60.1	71.1	72.4	71.5	71.1	72.7	74.1	75.4
62.5°	56.0	54.3	55.3	57.9	68.8	69.9	69.3	69.3	70.8	71.8	73.0
65°	53.0	52.4	53.0	55.6	66.9	67.3	67.3	67.6	68.8	69.6	70.8
67.5°	50.4	50.4	50.7	53.4	65.4	64.7	64.7	66.3	66.6	67.3	68.5
70°	47.3	47.9	47.9	51.0	64.0	61.8	62.1	63.4	64.0	64.7	65.0
72.5°	43.7	44.0	44.6	48.8	62.1	58.8	59.2	60.1	60.5	61.5	61.8
75°	39.8	40.1	41.0	46.5	60.8	56.0	55.3	56.0	56.6	57.3	56.9
77.5°	35.3	35.9	36.8	45.3	56.6	55.3	50.4	51.0	51.8	51.8	51.5
80°	29.8	30.7	32.3	43.4	47.9	53.4	44.9	45.3	45.6	45.6	44.9
82.5°	22.3	24.2	26.5	35.9	37.5	45.6	38.8	39.5	38.5	37.8	37.5
85°	14.5	16.2	19.4	24.9	27.5	35.9	32.0	32.3	30.4	30.1	30.1
87.5°	5.8	6.1	8.7	12.6	16.5	22.3	22.9	23.6	22.0	22.0	22.6
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: P196231

CATALOG NUMBER: NAV-AF-01-D-UNV-SLR-800

CANDELA DISTRIBUTION (continued):

	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°	285°
0°	1520.5	1520.5	1520.5	1520.5	1520.5	1520.5	1520.5	1520.5	1520.5	1520.5	1520.5
2.5°	1385.7	1418.0	1455.2	1493.0	1524.1	1564.2	1603.0	1644.4	1665.4	1677.6	1712.3
5°	1123.4	1167.7	1220.4	1279.6	1328.7	1412.8	1503.4	1604.3	1652.8	1700.7	1791.2
7.5°	803.6	846.9	908.4	985.0	1054.9	1165.8	1285.1	1421.6	1488.8	1566.4	1714.9
10°	596.6	642.5	698.2	763.2	832.1	947.5	1081.4	1234.7	1308.8	1396.3	1565.1
12.5°	483.8	537.5	595.1	653.3	712.4	790.0	930.4	1100.8	1180.3	1268.7	1437.8
15°	377.4	435.0	497.1	560.4	619.3	705.9	849.2	1050.7	1141.5	1226.9	1365.3
17.5°	267.1	321.4	391.3	468.2	553.6	656.1	831.8	1072.7	1182.9	1272.1	1365.0
20°	182.1	219.5	289.4	380.6	486.0	616.0	838.2	1149.9	1287.7	1385.7	1420.9
22.5°	145.6	163.3	210.5	303.3	427.8	587.0	864.7	1256.0	1438.1	1557.3	1522.8
25°	132.3	142.3	166.8	239.6	376.1	567.5	916.5	1396.0	1606.5	1727.5	1645.3
27.5°	124.2	132.9	148.7	196.9	331.4	555.0	982.1	1560.9	1796.4	1895.6	1773.1
30°	119.0	127.8	142.3	176.9	297.8	536.1	1039.6	1711.6	1948.0	2012.3	1841.9
32.5°	108.9	115.8	127.8	158.5	272.6	514.1	1089.4	1846.5	2091.3	2112.6	1924.8
35°	98.6	105.8	117.7	143.6	257.8	497.1	1115.6	1966.1	2233.2	2212.8	2006.9
37.5°	94.7	100.6	111.6	132.9	249.6	485.7	1125.7	2083.9	2385.5	2323.8	2064.1
40°	92.2	97.4	107.0	125.8	247.3	475.1	1123.4	2195.8	2533.3	2438.6	2109.1
42.5°	90.2	94.7	103.8	120.9	241.2	465.0	1115.9	2292.4	2651.7	2537.5	2152.1
45°	88.6	93.5	102.5	123.6	230.0	454.0	1111.4	2380.7	2742.5	2621.0	2209.7
47.5°	88.0	93.5	102.8	122.9	217.7	441.7	1127.6	2478.7	2821.8	2691.2	2286.3
50°	87.0	93.1	110.0	117.0	200.8	426.6	1182.2	2595.4	2904.9	2770.0	2385.5
52.5°	85.4	92.8	117.4	112.5	179.1	405.5	1270.9	2760.3	3048.5	2923.7	2532.4
55°	83.5	93.5	112.2	105.5	156.2	378.4	1359.5	2986.4	3281.3	3171.4	2743.2
57.5°	81.1	92.5	106.1	98.9	137.1	344.1	1426.7	3171.7	3473.4	3426.9	3002.3
60°	79.6	94.7	95.4	95.0	124.8	311.4	1433.3	3159.7	3528.7	3592.7	3255.7
62.5°	77.6	96.7	87.0	92.2	118.7	281.0	1353.4	2964.1	3435.3	3571.4	3462.4
65°	75.0	84.4	82.4	89.6	118.7	264.8	1167.4	2638.4	3176.9	3369.6	3574.6
67.5°	72.4	76.6	79.3	86.0	121.2	249.6	938.1	2225.5	2769.4	3044.0	3448.5
70°	68.8	72.4	75.7	82.8	120.0	239.0	738.3	1783.7	2279.1	2593.5	3099.5
72.5°	65.7	68.2	71.5	77.9	120.0	234.2	593.1	1399.3	1740.1	2005.0	2567.6
75°	60.8	63.0	66.0	73.0	117.7	214.1	445.3	1121.2	1273.2	1439.0	2026.0
77.5°	56.0	57.6	59.8	66.9	106.1	178.8	315.0	868.3	943.3	1035.1	1579.3
80°	49.8	51.0	52.7	59.8	88.0	138.7	205.0	679.1	705.3	749.6	1039.0
82.5°	42.7	44.6	44.9	51.5	70.8	100.6	121.9	465.3	465.0	530.0	733.1
85°	34.9	35.9	36.5	40.4	52.4	66.9	80.2	254.2	226.7	317.5	636.7
87.5°	26.2	25.3	26.2	27.2	34.6	39.5	43.0	46.9	28.1	57.6	370.3
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: P196231

CATALOG NUMBER: NAV-AF-01-D-UNV-SLR-800

CANDELA DISTRIBUTION (continued):

	295°	305°	315°	325°	335°	345°	355°	360°
0°	1520.5	1520.5	1520.5	1520.5	1520.5	1520.5	1520.5	1520.5
2.5°	1730.7	1749.8	1738.5	1724.9	1690.9	1641.1	1603.0	1569.7
5°	1853.9	1889.2	1873.6	1823.2	1735.2	1635.3	1530.2	1466.2
7.5°	1838.4	1908.2	1902.1	1818.0	1692.0	1544.8	1397.0	1312.5
10°	1714.3	1812.3	1829.0	1743.0	1609.4	1444.8	1273.8	1178.4
12.5°	1579.0	1661.5	1695.7	1663.1	1537.3	1370.1	1195.8	1100.5
15°	1465.9	1507.6	1541.6	1562.6	1484.6	1343.6	1182.2	1083.9
17.5°	1382.1	1374.0	1402.5	1452.9	1456.2	1378.8	1243.7	1133.7
20°	1341.7	1278.3	1294.9	1365.6	1448.4	1468.4	1366.3	1236.2
22.5°	1339.5	1240.4	1243.7	1320.0	1470.7	1590.7	1519.2	1371.2
25°	1374.3	1236.2	1239.2	1315.2	1510.2	1714.0	1696.2	1523.5
27.5°	1433.9	1254.3	1252.4	1336.5	1562.9	1816.8	1874.7	1709.7
30°	1498.2	1280.5	1275.7	1370.8	1614.6	1880.1	2001.4	1850.0
32.5°	1578.4	1327.2	1310.3	1420.9	1665.8	1940.9	2109.7	1981.4
35°	1654.7	1395.4	1371.2	1492.7	1720.4	2008.5	2231.0	2126.5
37.5°	1732.7	1497.2	1483.7	1596.2	1797.6	2081.9	2369.8	2291.1
40°	1832.6	1642.1	1635.7	1746.6	1900.8	2162.1	2525.3	2462.5
42.5°	1940.2	1796.0	1790.6	1919.3	2028.9	2242.6	2658.4	2609.6
45°	2049.9	1982.7	1983.9	2103.6	2163.7	2318.6	2763.3	2727.4
47.5°	2179.3	2186.7	2232.9	2294.7	2295.0	2403.3	2856.1	2836.9
50°	2343.5	2433.1	2518.5	2528.2	2427.6	2515.2	2969.6	2962.5
52.5°	2529.5	2717.4	2816.6	2785.9	2557.0	2653.9	3137.4	3137.1
55°	2750.3	3014.5	3108.0	3055.6	2711.8	2834.7	3356.7	3342.4
57.5°	2979.2	3300.4	3375.7	3307.5	2905.6	3045.2	3576.5	3501.3
60°	3226.7	3546.5	3623.1	3520.6	3122.9	3255.1	3722.1	3545.9
62.5°	3388.7	3690.4	3745.3	3647.0	3317.5	3468.9	3769.0	3492.5
65°	3397.1	3594.6	3609.2	3574.3	3400.3	3654.5	3701.0	3334.3
67.5°	3166.2	3177.8	3196.9	3234.5	3223.4	3571.7	3439.2	2965.0
70°	2672.4	2517.2	2579.9	2616.1	2697.6	3176.9	2955.0	2411.4
72.5°	2043.4	1816.8	1887.9	1875.6	2045.1	2605.8	2260.7	1857.5
75°	1470.7	1238.9	1244.3	1245.0	1469.5	2080.0	1541.6	1319.1
77.5°	999.5	876.7	894.8	883.4	983.4	1629.5	1109.8	950.7
80°	683.6	680.4	684.3	657.8	655.8	1053.2	821.7	758.3
82.5°	507.1	468.6	463.1	435.0	502.6	805.2	623.8	544.9
85°	400.0	259.3	225.4	272.0	435.3	740.8	380.3	279.4
87.5°	169.4	101.9	61.8	122.2	241.9	543.0	105.5	54.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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