

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: P196202

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

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196202  
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-600  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(2) 70 CRI, 4000K, 615mA 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: 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

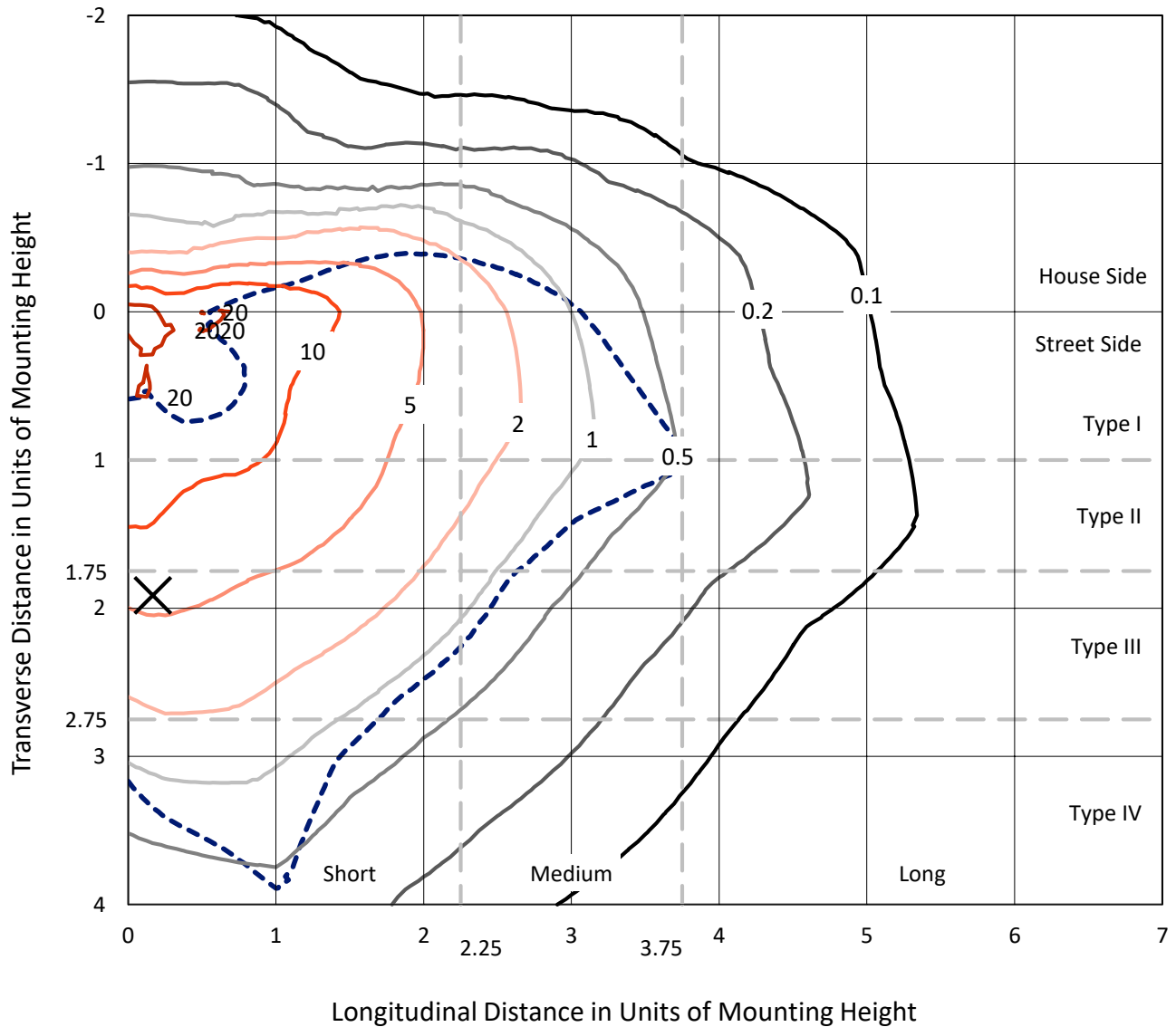
Input Watts (W): 66  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



REPORT NUMBER: P196202  
 CATALOG NUMBER: NAV-AF-02-D-UNV-SLL-600

### Iso-Footcandle Lines of Horizontal Illumination

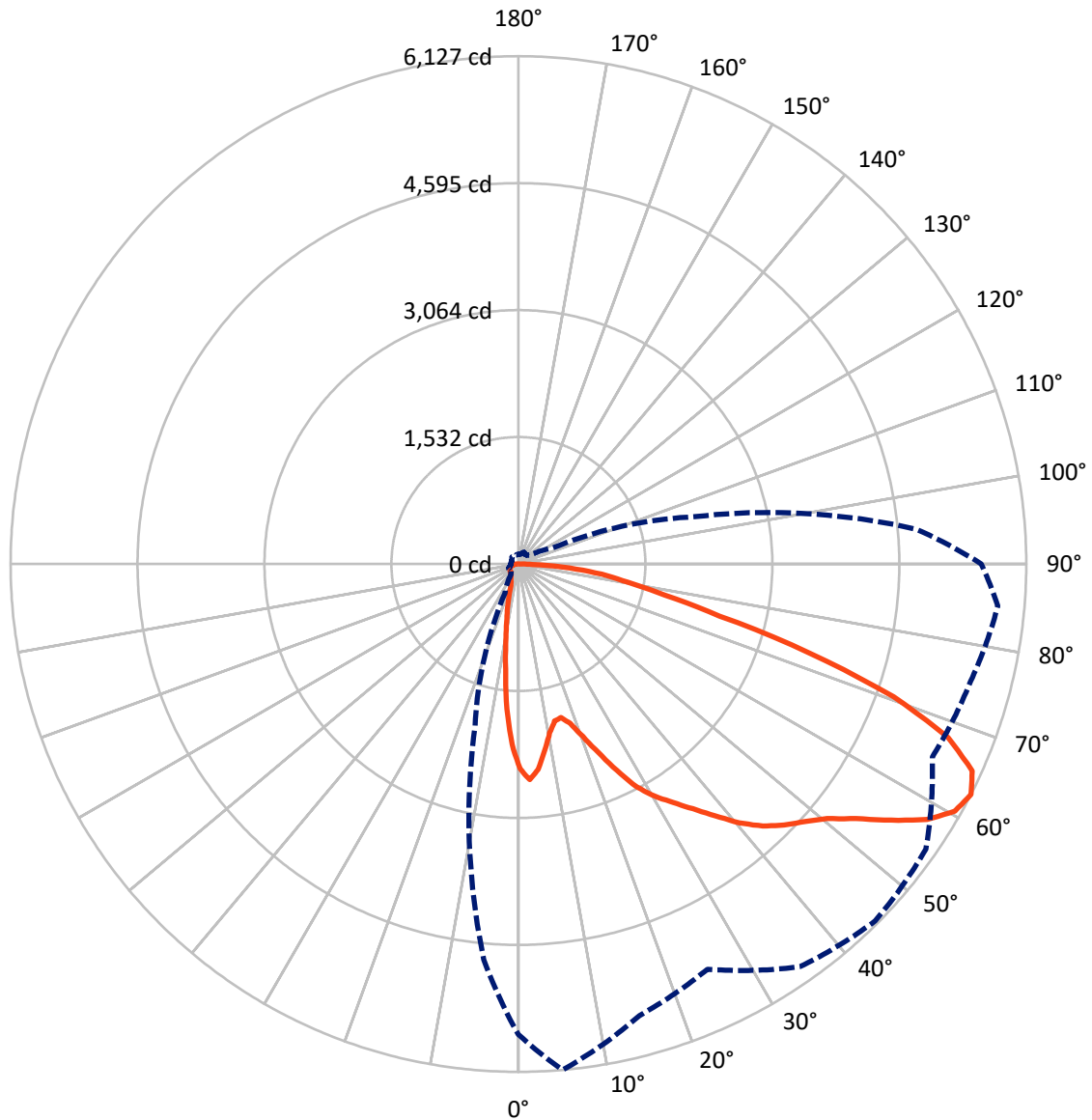
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 28.4 fc  
 Type IV - Short - Non-Cutoff

REPORT NUMBER: P196202  
CATALOG NUMBER: NAV-AF-02-D-UNV-SLL-600

### Luminous Intensity Polar Plot



— Vertical Plane Through 5-Deg Lateral      - - - Horizontal Cone Through 62.5-Deg Vertical

REPORT NUMBER: P196202

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

**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	1284.5	0.0	1284.5
	% Fixture	17.7	0.0	17.7
<b>Street Side</b>	Lumens	5966.2	0.0	5966.2
	% Fixture	82.3	0.0	82.3
<b>Total</b>	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: P196202

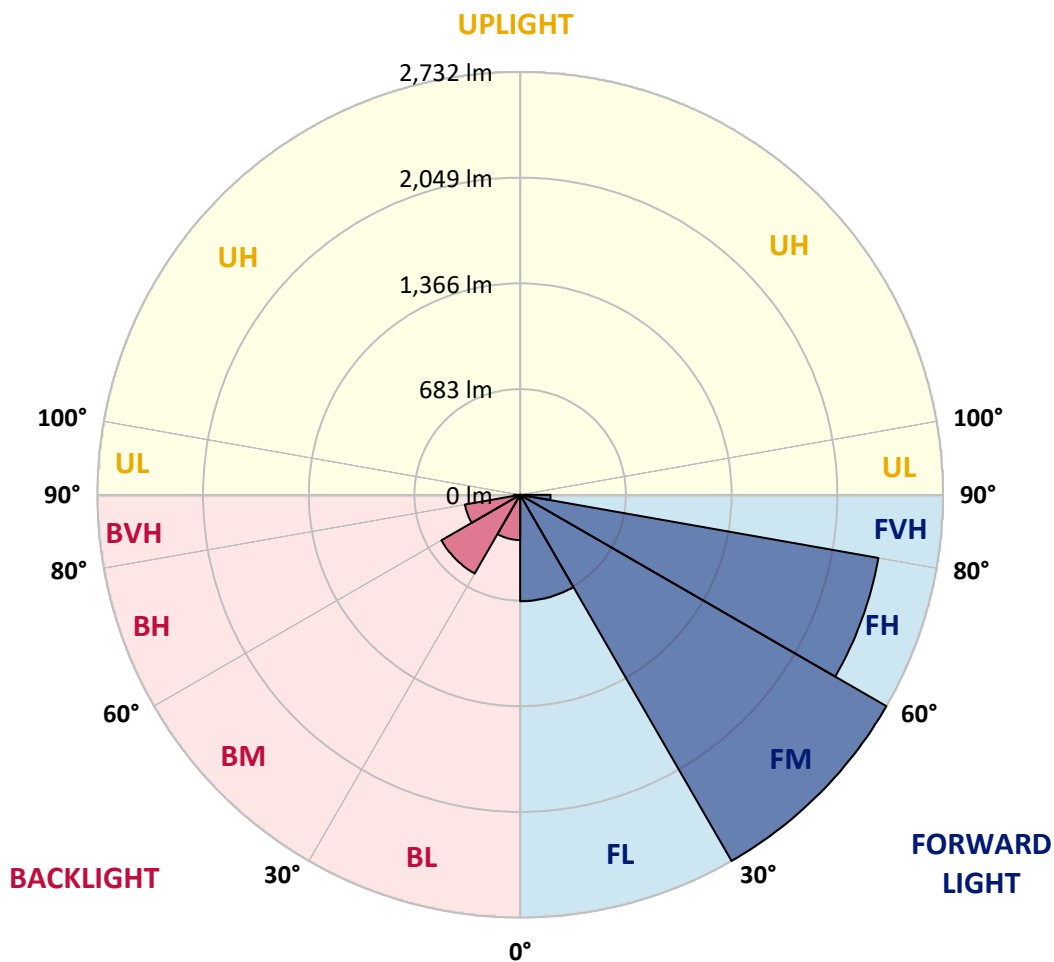
CATALOG NUMBER: NAV-AF-02-D-UNV-SLL-600

**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: P196202

CATALOG NUMBER: NAV-AF-02-D-UNV-SLL-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	2606.0	2668.0	2749.0	2804.1	2826.2	2844.6	2813.6	2783.7	2727.4	2707.4
5°	2383.6	2487.7	2658.5	2821.0	2964.0	3045.9	3071.2	3013.9	2911.9	2764.7	2686.9
7.5°	2133.9	2271.1	2511.3	2750.5	2955.5	3092.3	3102.2	2988.7	2787.8	2546.5	2420.4
10°	1915.7	2070.8	2348.9	2616.5	2833.6	2973.4	2946.1	2786.8	2544.5	2270.0	2127.5
12.5°	1789.0	1944.1	2227.5	2499.3	2703.8	2756.9	2701.1	2567.1	2337.3	2062.4	1918.9
15°	1762.2	1922.0	2184.3	2413.6	2540.2	2506.0	2450.9	2383.1	2219.6	1994.5	1855.7
17.5°	1843.2	2021.9	2241.6	2367.3	2362.0	2280.1	2233.7	2246.9	2219.0	2068.2	1923.0
20°	2009.8	2221.1	2387.3	2354.6	2220.1	2104.9	2078.1	2181.1	2310.0	2252.6	2093.4
22.5°	2229.0	2469.8	2586.0	2390.9	2145.9	2021.9	2016.6	2177.5	2475.5	2531.8	2337.9
25°	2476.7	2757.4	2786.3	2455.1	2138.1	2014.5	2009.8	2234.2	2674.8	2808.3	2611.7
27.5°	2779.5	3047.6	2953.5	2540.8	2172.7	2036.1	2039.3	2331.0	2882.5	3081.7	2920.3
30°	3007.6	3253.6	3056.5	2624.9	2228.5	2073.9	2081.8	2435.6	2994.5	3271.5	3166.9
32.5°	3221.1	3429.7	3155.3	2708.0	2310.0	2130.2	2157.5	2566.0	3129.0	3434.5	3399.8
35°	3457.1	3626.9	3265.2	2796.7	2426.6	2229.0	2268.5	2690.1	3262.6	3597.4	3630.6
37.5°	3724.7	3852.4	3384.5	2922.5	2594.9	2412.0	2434.0	2816.8	3355.6	3777.8	3878.2
40°	4003.3	4105.3	3515.0	3090.1	2839.4	2659.1	2669.6	2979.2	3428.7	3964.4	4118.4
42.5°	4242.5	4321.9	3645.8	3298.3	3120.1	2910.9	2919.8	3154.3	3498.6	4125.3	4310.8
45°	4433.9	4492.2	3769.4	3517.5	3419.7	3225.3	3223.1	3332.5	3592.2	4260.9	4458.5
47.5°	4612.1	4643.1	3907.1	3731.0	3730.5	3630.0	3554.9	3542.8	3716.8	4375.0	4587.3
50°	4816.1	4827.6	4089.0	3946.5	4110.0	4094.3	3955.4	3809.9	3878.2	4503.2	4722.5
52.5°	5099.9	5100.4	4314.5	4156.8	4529.0	4578.9	4417.5	4112.2	4116.9	4752.9	4955.9
55°	5433.8	5456.9	4608.4	4408.6	4967.4	5052.7	4900.7	4471.2	4459.7	5155.7	5334.4
57.5°	5691.9	5814.4	4950.7	4723.5	5376.9	5487.9	5365.4	4843.4	4880.7	5571.0	5646.7
60°	5764.4	6051.0	5291.8	5076.8	5723.4	5890.0	5765.5	5245.6	5292.8	5840.6	5736.6
62.5°	5677.7	6127.2	5639.3	5393.3	5929.0	6088.8	5999.4	5508.9	5628.8	5806.0	5584.6
65°	5420.6	6016.8	5941.1	5527.8	5810.7	5867.4	5843.8	5522.6	5811.2	5477.9	5164.6
67.5°	4820.2	5590.9	5806.5	5240.3	5258.2	5197.2	5166.2	5147.3	5606.2	4948.5	4502.2
70°	3920.3	4804.0	5164.6	4385.5	4253.0	4194.1	4092.1	4344.5	5039.0	4216.2	3705.2
72.5°	3019.6	3675.3	4236.1	3324.6	3049.1	3069.2	2953.5	3321.9	4174.2	3259.4	2828.9
75°	2144.4	2506.0	3381.4	2388.8	2024.0	2023.0	2014.0	2390.9	3293.6	2339.4	2069.7
77.5°	1545.6	1804.3	2649.0	1598.7	1436.2	1454.6	1425.2	1625.0	2567.6	1682.9	1533.5
80°	1232.8	1335.9	1712.2	1066.1	1069.3	1112.4	1106.1	1111.3	1689.1	1218.6	1146.6
82.5°	885.9	1014.1	1309.1	816.9	707.1	752.8	761.8	824.3	1191.8	861.6	756.0
85°	454.2	618.3	1204.4	707.6	442.1	366.4	421.7	650.3	1035.1	516.3	368.6
87.5°	88.3	171.3	882.7	393.2	198.8	100.5	165.6	275.5	601.9	93.6	45.7
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: P196202

CATALOG NUMBER: NAV-AF-02-D-UNV-SLL-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°	2673.3	2606.0	2542.9	2477.7	2427.3	2365.7	2305.2	2252.6	2201.7	2168.0	2178.6
5°	2608.0	2444.0	2296.8	2160.2	2080.3	1984.0	1898.4	1826.3	1770.6	1734.8	1756.4
7.5°	2311.1	2089.2	1895.2	1714.9	1601.3	1476.7	1376.9	1306.4	1263.2	1239.1	1274.3
10°	2007.1	1757.9	1540.4	1352.6	1240.6	1135.0	1044.6	970.0	912.1	884.8	899.0
12.5°	1789.6	1512.4	1284.3	1158.2	1061.9	967.3	873.7	786.4	712.9	679.2	672.4
15°	1708.0	1380.5	1147.6	1006.8	911.0	808.0	707.1	613.5	543.6	514.6	508.4
17.5°	1743.8	1352.1	1066.6	900.0	761.3	636.1	522.5	434.2	382.7	366.4	368.0
20°	1869.4	1362.7	1001.5	790.1	618.8	470.6	357.0	295.9	273.9	270.3	274.5
22.5°	2041.9	1405.7	954.2	695.5	493.2	342.3	265.5	236.6	230.8	230.3	234.5
25°	2269.5	1489.8	922.6	611.4	389.5	271.3	231.3	215.0	210.3	211.3	215.5
27.5°	2537.6	1596.6	902.1	538.9	320.2	241.8	216.0	201.8	197.1	198.1	201.3
30°	2782.6	1690.1	871.7	484.2	287.6	231.3	207.7	193.4	187.2	187.2	189.2
32.5°	3001.8	1771.1	835.9	443.1	257.6	207.7	188.2	177.2	172.5	174.0	175.0
35°	3196.3	1813.7	808.0	419.0	233.4	191.4	172.0	160.3	154.1	155.1	156.6
37.5°	3387.7	1830.0	789.6	405.8	216.0	181.4	163.5	154.1	147.2	146.2	145.7
40°	3569.6	1826.3	772.2	402.1	204.5	174.0	158.3	149.9	143.0	141.4	140.9
42.5°	3726.8	1814.2	756.0	392.2	196.6	168.8	154.1	146.7	139.8	137.7	136.7
45°	3870.3	1806.8	738.1	373.8	200.8	166.6	151.9	144.0	137.7	135.1	134.0
47.5°	4029.6	1833.1	718.1	353.8	199.8	167.2	151.9	143.0	136.7	134.0	133.0
50°	4219.4	1922.0	693.5	326.4	190.3	178.7	151.4	141.4	135.6	134.0	132.0
52.5°	4487.5	2066.1	659.3	291.2	182.9	190.9	150.9	138.8	134.0	131.4	128.8
55°	4854.9	2210.1	615.1	253.9	171.3	182.4	151.9	135.6	130.4	127.8	124.6
57.5°	5156.2	2319.4	559.3	222.9	160.9	172.5	150.4	132.0	126.1	123.6	120.9
60°	5136.7	2330.0	506.3	203.0	154.6	155.1	154.1	129.3	122.4	120.4	118.3
62.5°	4818.7	2200.1	456.8	192.9	149.9	141.4	157.2	126.1	118.8	116.7	115.1
65°	4289.3	1897.8	430.6	192.9	145.7	134.0	137.2	121.9	115.1	113.0	112.0
67.5°	3618.0	1525.1	405.8	197.1	139.8	128.8	124.6	117.7	111.5	109.4	108.3
70°	2899.9	1200.2	388.5	195.1	134.6	123.1	117.7	112.0	105.7	105.2	104.1
72.5°	2274.7	964.1	380.6	195.1	126.7	116.2	110.9	106.7	100.5	99.8	98.3
75°	1822.7	723.9	348.0	191.4	118.8	107.2	102.5	98.8	92.5	93.1	92.0
77.5°	1411.6	512.1	290.7	172.5	108.8	97.3	93.6	90.9	83.6	84.1	84.1
80°	1104.0	333.3	225.6	143.0	97.3	85.7	83.1	80.9	73.0	74.2	74.2
82.5°	756.5	198.1	163.5	115.1	83.6	73.0	72.5	69.4	61.0	61.5	62.6
85°	413.2	130.4	108.8	85.2	65.7	59.4	58.3	56.8	48.9	48.9	49.4
87.5°	76.2	70.0	64.1	56.3	44.2	42.6	41.0	42.6	36.8	35.7	35.7
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: P196202

CATALOG NUMBER: NAV-AF-02-D-UNV-SLL-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°	2153.8	2117.6	2092.3	2070.2	2017.2	2020.8	2028.2	2038.7	2005.6	2023.0	2044.5
5°	1734.8	1704.8	1682.2	1647.1	1572.9	1546.6	1529.8	1522.5	1473.0	1483.6	1506.7
7.5°	1279.1	1278.5	1270.6	1231.2	1141.8	1087.7	1051.9	1041.0	1010.4	1022.0	1057.2
10°	900.5	910.0	906.3	871.1	791.2	752.3	744.4	766.5	767.0	789.6	850.1
12.5°	650.8	645.6	640.9	611.9	552.0	545.6	563.5	594.0	601.4	625.6	688.7
15°	485.8	473.1	470.6	448.0	408.5	414.3	427.4	443.1	443.7	460.5	512.6
17.5°	364.3	364.3	368.6	353.8	325.4	322.7	316.0	311.8	305.5	312.3	340.6
20°	282.8	295.9	306.5	298.1	272.3	259.7	246.5	238.1	233.4	233.9	242.3
22.5°	242.3	252.9	266.6	262.3	240.8	224.4	216.0	210.3	206.6	206.6	211.3
25°	221.9	228.7	241.3	239.2	220.8	207.7	200.8	195.1	190.9	190.3	195.1
27.5°	205.5	209.8	218.2	217.1	198.1	189.8	185.6	181.9	179.2	178.7	183.5
30°	190.9	192.9	197.1	195.6	181.4	173.0	171.3	169.8	168.3	168.8	175.5
32.5°	177.7	179.2	181.9	179.8	166.1	158.8	156.1	154.1	152.4	154.1	161.9
35°	163.0	167.7	170.8	169.8	155.1	146.2	140.3	135.1	133.0	134.6	143.5
37.5°	150.4	158.3	162.4	161.4	146.2	135.6	128.3	127.3	127.3	129.3	138.3
40°	145.7	151.4	155.1	153.5	138.3	127.8	123.6	121.9	122.4	124.6	134.0
42.5°	141.4	146.7	147.7	144.5	129.3	122.4	119.9	117.7	118.8	121.4	130.9
45°	137.7	142.0	141.4	136.7	121.9	117.2	117.2	115.7	116.2	118.3	128.3
47.5°	135.1	137.2	136.2	131.4	116.7	113.0	114.6	114.6	115.7	117.2	127.3
50°	130.9	132.5	131.4	127.3	112.5	109.4	110.9	113.0	114.1	115.7	124.6
52.5°	126.7	127.8	127.3	123.1	108.3	106.2	106.2	108.3	110.4	112.5	120.4
55°	122.4	123.6	124.1	120.9	105.2	103.0	102.5	102.5	104.6	107.8	116.2
57.5°	119.4	119.4	120.4	118.3	102.0	99.3	96.8	97.3	99.8	102.5	110.9
60°	115.7	116.2	117.7	115.7	97.8	93.6	91.5	94.1	95.1	97.8	106.7
62.5°	112.5	112.5	113.5	112.0	94.1	89.9	88.3	90.9	90.9	93.6	102.5
65°	109.9	109.4	109.4	108.8	90.4	86.2	85.2	86.2	86.7	89.4	98.3
67.5°	107.8	105.2	105.2	106.2	86.7	82.6	82.0	82.0	82.6	85.7	93.6
70°	103.0	101.0	100.5	104.1	83.1	77.8	77.8	76.7	77.8	79.4	87.8
72.5°	97.8	96.2	95.6	101.0	79.4	72.5	71.5	71.0	71.5	73.0	80.9
75°	90.9	89.9	90.9	98.8	75.7	66.8	65.2	64.7	64.7	65.2	73.6
77.5°	83.1	82.0	89.9	92.0	73.6	59.9	58.3	57.3	56.3	56.3	65.7
80°	73.6	73.0	86.7	77.8	70.5	52.6	49.9	48.4	47.4	46.7	56.3
82.5°	64.1	63.1	74.2	61.0	58.3	43.1	39.4	36.3	34.7	34.7	43.1
85°	52.6	52.1	58.3	44.7	40.5	31.5	26.3	23.6	21.6	21.6	27.8
87.5°	38.4	37.3	36.3	26.8	20.5	14.2	10.0	9.5	8.4	7.9	11.6
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: P196202

CATALOG NUMBER: NAV-AF-02-D-UNV-SLL-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°	2076.6	2120.2	2202.7	2270.5	2361.0	2433.5	2516.0	2551.9
5°	1549.3	1618.1	1744.3	1852.1	2001.4	2139.6	2297.3	2383.6
7.5°	1111.3	1213.3	1309.1	1443.6	1630.3	1815.8	2019.8	2133.9
10°	919.4	1013.0	1095.1	1190.7	1334.7	1543.5	1786.9	1915.7
12.5°	761.8	862.7	949.4	1051.9	1172.9	1361.5	1639.2	1789.0
15°	584.1	694.0	798.0	921.6	1069.8	1285.3	1595.0	1762.2
17.5°	400.1	517.8	646.1	797.0	975.7	1253.3	1637.0	1843.2
20°	271.8	358.0	497.4	676.1	891.1	1238.1	1729.6	2009.8
22.5°	223.4	262.3	366.9	562.5	821.7	1254.9	1880.0	2229.0
25°	205.0	226.1	285.5	462.6	768.5	1299.6	2083.4	2476.7
27.5°	193.4	211.3	250.2	391.2	719.7	1360.5	2331.0	2779.5
30°	186.6	203.5	236.0	354.4	675.0	1413.1	2543.9	3007.6
32.5°	171.3	184.0	210.8	333.3	642.9	1455.7	2731.6	3221.1
35°	153.0	168.3	190.3	319.7	641.9	1475.7	2908.2	3457.1
37.5°	146.2	160.9	177.2	312.3	648.2	1492.5	3124.3	3724.7
40°	142.0	155.1	168.3	311.2	653.5	1505.7	3335.6	4003.3
42.5°	138.3	151.4	166.6	303.8	651.3	1523.5	3522.8	4242.5
45°	137.2	150.4	170.3	292.9	650.8	1551.4	3671.6	4433.9
47.5°	136.2	156.1	169.3	280.7	648.8	1610.2	3839.2	4612.1
50°	135.1	166.6	161.9	263.9	633.0	1710.7	4064.8	4816.1
52.5°	134.6	168.3	154.1	240.8	604.6	1859.4	4395.0	5099.9
55°	132.5	159.8	140.3	210.3	563.5	2019.8	4748.7	5433.8
57.5°	127.8	142.5	132.5	180.3	504.7	2131.7	5010.0	5691.9
60°	139.3	122.4	127.3	165.1	434.2	2151.8	5021.6	5764.4
62.5°	133.0	111.5	121.9	159.8	384.8	2021.4	4791.9	5677.7
65°	106.2	105.7	117.2	165.1	377.5	1729.6	4403.9	5420.6
67.5°	96.8	101.5	112.5	171.3	382.2	1362.7	3833.0	4820.2
70°	90.4	96.2	106.2	177.2	390.6	1073.5	3085.9	3920.3
72.5°	84.1	88.9	99.8	182.9	384.8	846.9	2469.8	3019.6
75°	76.2	80.4	90.9	167.7	330.1	622.5	1962.5	2144.4
77.5°	67.3	71.0	79.9	132.5	248.2	433.2	1469.9	1545.6
80°	57.8	59.4	66.3	96.8	161.9	259.2	1118.7	1232.8
82.5°	45.7	46.2	50.4	71.0	101.0	165.6	775.9	885.9
85°	29.5	30.5	32.6	49.9	67.8	106.2	396.4	454.2
87.5°	10.0	11.6	11.6	24.1	33.1	58.9	121.4	88.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)