

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: P196166

Luminaire Tested: **NAV-AF-02-D-UNV-SL4-HSS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196166  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24285)  
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-SL4-HSS  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(2) 70 CRI, 4000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV  
SPILL LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 10150.7 lumens  
Efficiency: N/A  
Efficacy: 89.8 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

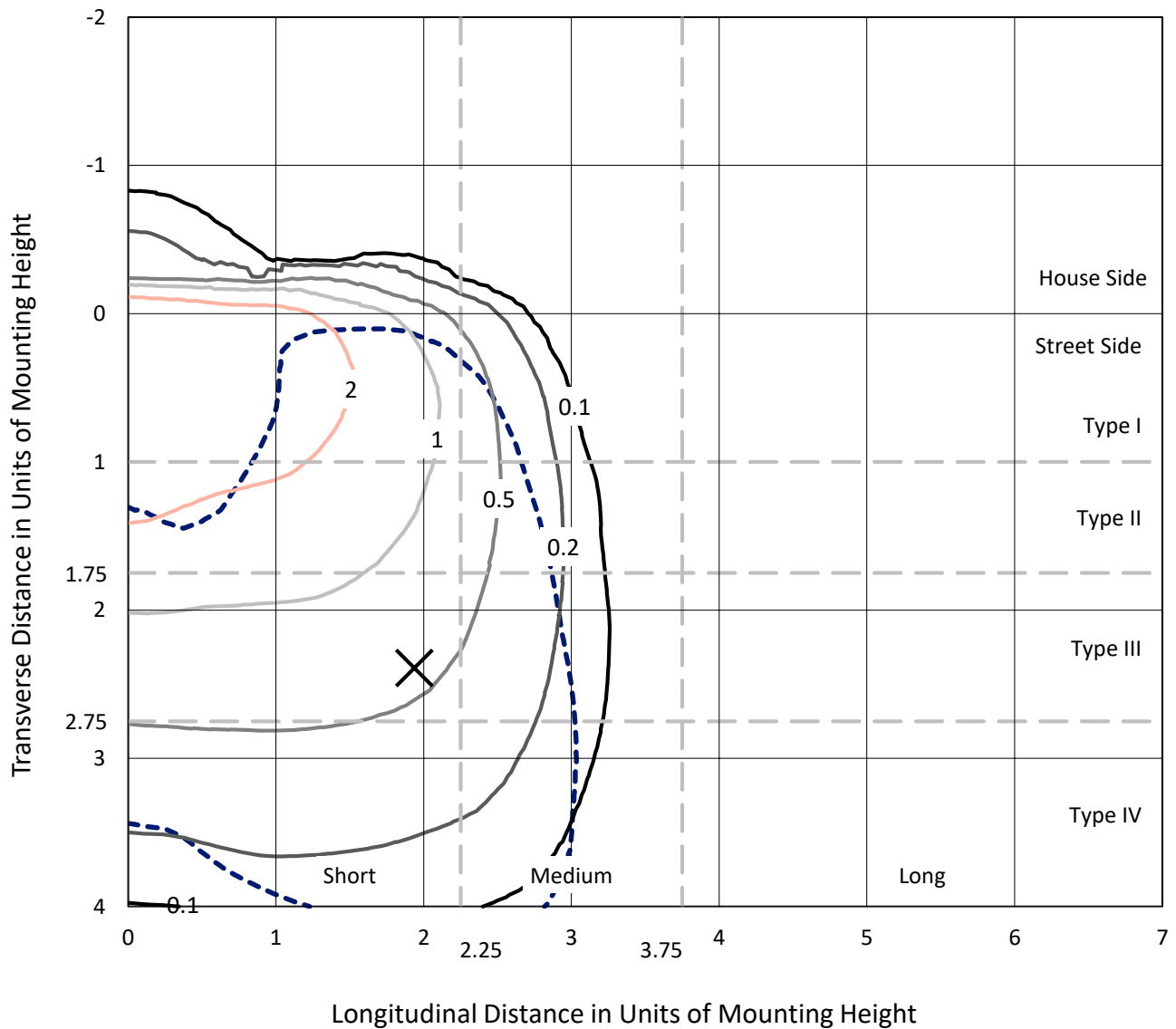
Input Watts (W): 113  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



REPORT NUMBER: P196166  
 CATALOG NUMBER: NAV-AF-02-D-UNV-SL4-HSS

### Iso-Footcandle Lines of Horizontal Illumination

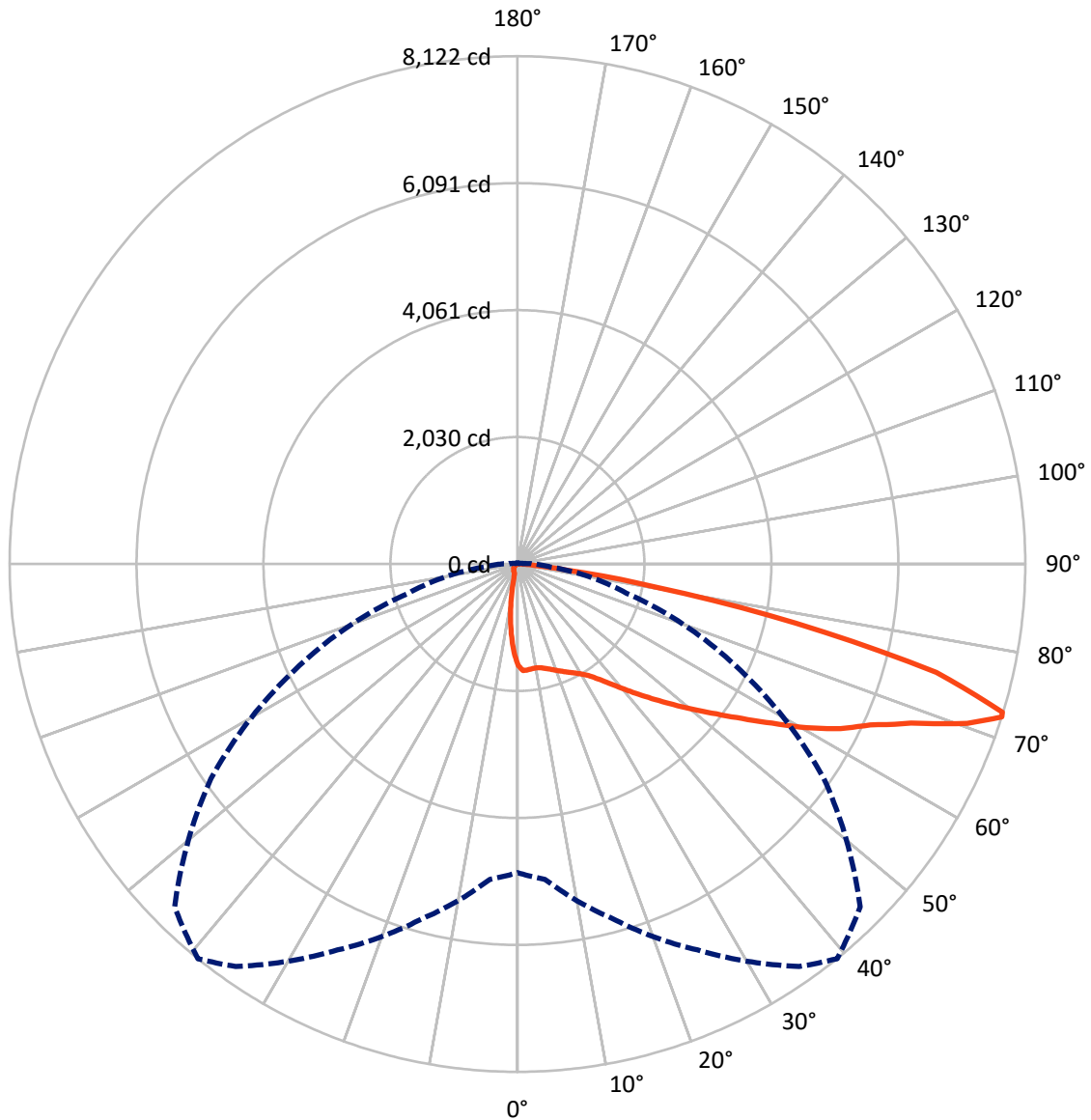
✕ Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 4.3 fc  
 Type IV - Short - Non-Cutoff

REPORT NUMBER: P196166  
CATALOG NUMBER: NAV-AF-02-D-UNV-SL4-HSS

### Luminous Intensity Polar Plot



— Vertical Plane Through 39-Deg Lateral      - - - Horizontal Cone Through 72-Deg Vertical

REPORT NUMBER: P196166

CATALOG NUMBER: NAV-AF-02-D-UNV-SL4-HSS

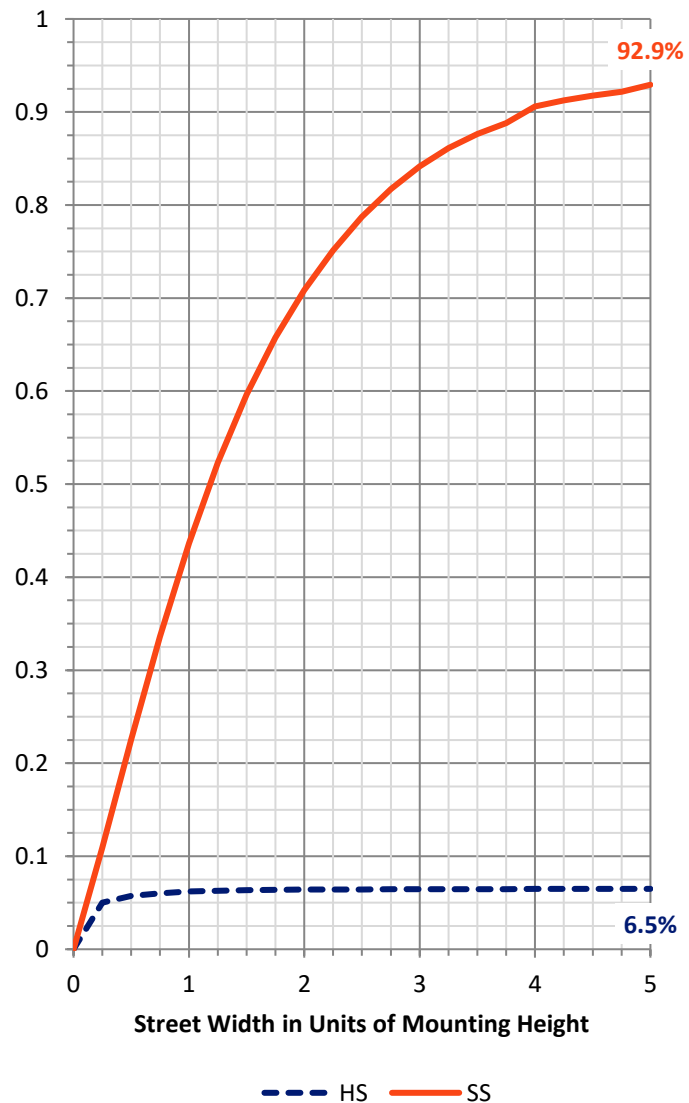
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	665.3	0.0	665.3
	% Fixture	6.6	0.0	6.6
<b>Street Side</b>	Lumens	9485.5	0.0	9485.5
	% Fixture	93.4	0.0	93.4
<b>Total</b>	Lumens	10150.7	0.0	10150.7
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	132.1	1.3
10°-20°	319.9	3.2
20°-30°	531.4	5.2
30°-40°	846.9	8.3
40°-50°	1397.8	13.8
50°-60°	2111.0	20.8
60°-70°	2749.9	27.1
70°-80°	1858.2	18.3
80°-90°	203.5	2.0
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°	10150.7	100.0
0°-180°	10150.7	100.0



REPORT NUMBER: P196166

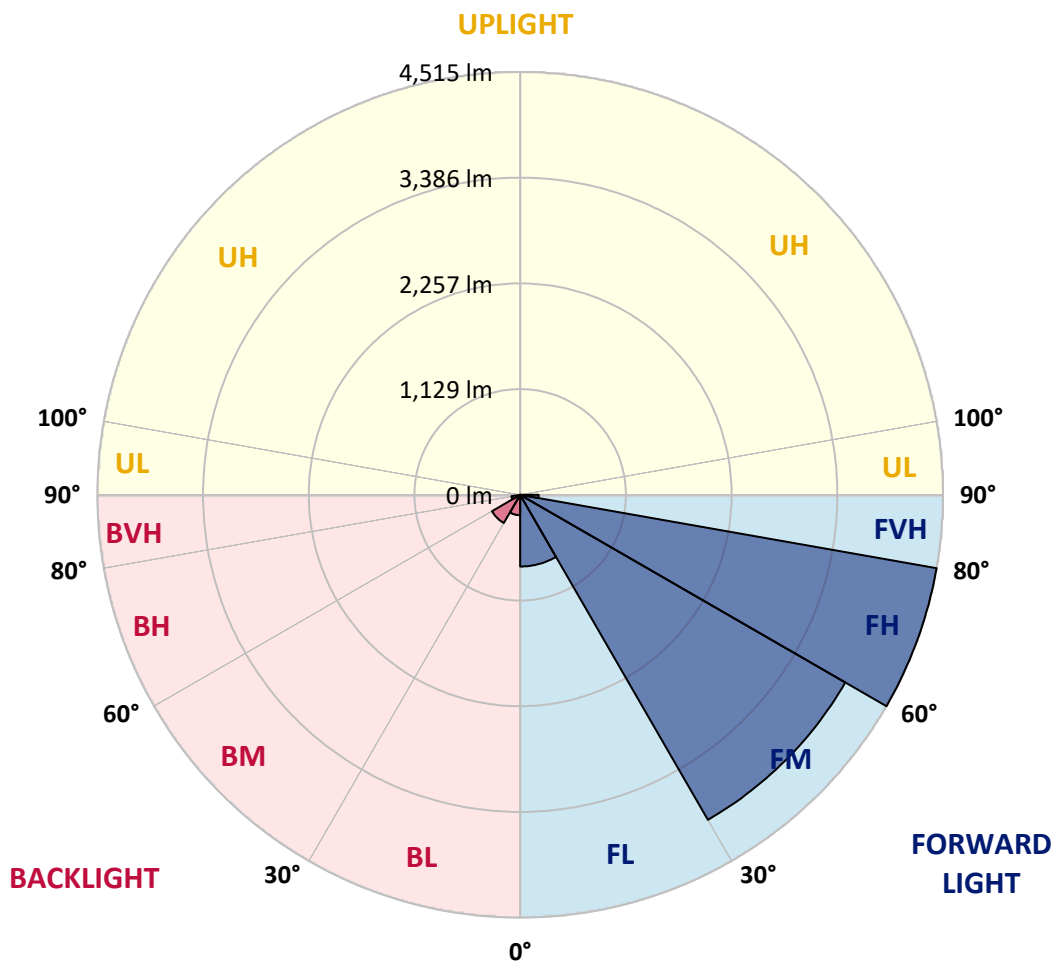
CATALOG NUMBER: NAV-AF-02-D-UNV-SL4-HSS

**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	765.6	7.5			
FM (30°-60°)	4007.6	39.5			
FH (60°-80°)	4514.6	44.5			G2/5000
FVH (80°-90°)	197.6	1.9			G2/225
BL (0°-30°)	217.8	2.1	B1/500		
BM (30°-60°)	348.1	3.4	B1/1000		
BH (60°-80°)	93.5	0.9	B0/110		G0/110
BVH (80°-90°)	5.9	0.1			G0/10
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: P196166

CATALOG NUMBER: NAV-AF-02-D-UNV-SL4-HSS

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	39°	45°	55°	65°	75°	85°
0°	1624.7	1624.7	1624.7	1624.7	1624.7	1624.7	1624.7	1624.7	1624.7	1624.7	1624.7
2.5°	1730.0	1733.2	1729.2	1722.0	1711.7	1705.3	1696.5	1677.3	1653.4	1632.6	1608.7
5°	1743.6	1745.2	1740.4	1726.8	1710.9	1702.1	1690.9	1670.2	1645.4	1616.7	1573.6
7.5°	1747.6	1746.8	1741.2	1724.5	1699.7	1688.5	1669.4	1643.9	1618.3	1592.0	1543.3
10°	1746.0	1746.0	1742.0	1726.0	1698.1	1687.8	1666.2	1639.1	1607.2	1580.8	1528.9
12.5°	1740.4	1743.6	1741.2	1732.5	1711.7	1703.7	1684.5	1657.4	1627.1	1600.0	1544.9
15°	1747.6	1752.4	1757.1	1754.0	1742.0	1734.8	1717.2	1689.3	1664.5	1635.9	1576.8
17.5°	1776.4	1786.7	1797.8	1798.7	1785.9	1773.1	1753.1	1724.5	1700.5	1674.2	1610.3
20°	1830.6	1838.5	1859.3	1863.3	1837.7	1819.4	1791.5	1757.9	1734.0	1711.7	1641.4
22.5°	1911.2	1920.0	1936.8	1931.1	1888.1	1866.5	1831.4	1793.0	1768.4	1755.6	1677.3
25°	2033.2	2035.7	2039.7	2014.9	1943.9	1920.0	1876.8	1833.7	1813.8	1812.3	1728.5
27.5°	2176.9	2180.1	2162.5	2107.5	2006.1	1975.0	1926.3	1887.2	1877.6	1889.6	1793.0
30°	2341.3	2342.0	2293.4	2204.0	2077.9	2043.7	1993.3	1950.3	1959.1	1988.6	1876.1
32.5°	2509.6	2501.6	2434.6	2318.1	2176.1	2134.6	2091.5	2048.5	2073.9	2133.8	1997.3
35°	2663.7	2660.5	2581.5	2445.8	2303.8	2267.1	2236.0	2190.4	2232.0	2329.3	2162.5
37.5°	2817.7	2815.3	2725.1	2583.9	2461.0	2434.6	2411.5	2376.4	2444.2	2587.0	2383.6
40°	2987.6	2983.6	2872.8	2737.1	2643.7	2629.4	2615.8	2600.6	2716.3	2915.0	2658.9
42.5°	3197.5	3179.9	3029.2	2903.9	2844.8	2848.8	2849.6	2864.8	3045.9	3305.3	2983.6
45°	3438.5	3399.4	3186.4	3082.6	3065.9	3089.8	3113.8	3176.8	3429.7	3754.5	3342.7
47.5°	3672.3	3609.3	3367.5	3274.9	3309.2	3358.8	3416.1	3539.0	3860.6	4224.5	3668.3
50°	3873.4	3808.8	3547.1	3470.5	3579.7	3653.2	3755.4	3941.2	4315.5	4621.9	3873.4
52.5°	4031.4	3980.3	3736.9	3685.9	3879.7	3980.3	4140.7	4384.9	4744.8	4883.7	4017.0
55°	4147.9	4122.4	3918.9	3926.1	4213.3	4358.6	4558.1	4834.2	5107.1	5087.1	4124.7
57.5°	4279.6	4259.7	4109.6	4209.3	4614.7	4802.2	5032.9	5254.7	5370.4	5250.7	4230.1
60°	4414.4	4420.8	4341.0	4552.4	5111.1	5318.5	5519.6	5574.7	5596.3	5416.7	4341.0
62.5°	4516.5	4543.7	4550.9	4922.7	5620.2	5797.4	5884.3	5845.2	5840.4	5639.3	4332.2
65°	4633.9	4704.9	4823.0	5329.0	6083.0	6199.5	6261.8	6318.5	6198.8	5705.6	3906.1
67.5°	4836.6	4948.3	5214.0	5826.8	6617.7	6790.0	6966.4	6906.6	6252.2	5032.9	2975.7
70°	5109.4	5245.9	5715.1	6477.2	7343.0	7631.9	7779.5	6859.5	5308.2	3477.6	1569.6
72°	4937.1	5060.8	5870.0	6809.2	7857.0	8121.8	7752.4	5983.2	3847.8	1802.6	525.9
72.5°	4769.5	4897.2	5820.5	6805.2	7908.0	8110.7	7576.1	5637.8	3405.0	1402.9	362.3
75°	3309.2	3470.5	4989.7	6117.3	7141.1	6918.5	5796.6	3413.8	1233.7	241.0	119.7
77.5°	1710.9	1835.4	3026.7	4322.7	4977.1	4558.1	3425.8	1481.0	341.6	127.7	79.0
80°	1060.5	1122.0	1415.7	2129.8	2585.5	2261.4	1511.4	598.5	218.6	75.8	63.0
82.5°	549.0	596.1	891.3	859.4	955.2	794.0	557.8	501.1	134.8	47.1	64.7
85°	180.3	191.5	547.4	571.3	408.6	274.5	247.3	478.0	39.1	30.3	55.0
87.5°	23.9	27.9	192.3	327.1	201.1	124.5	148.4	168.4	13.6	16.8	15.1
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: P196166

CATALOG NUMBER: NAV-AF-02-D-UNV-SL4-HSS

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1624.7	1624.7	1624.7	1624.7	1624.7	1624.7	1624.7	1624.7	1624.7	1624.7	1624.7
2.5°	1592.7	1582.4	1549.7	1516.9	1479.5	1445.1	1418.0	1400.4	1408.4	1382.1	1386.1
5°	1547.3	1520.9	1449.1	1371.8	1287.9	1209.7	1147.5	1101.2	1092.4	1052.5	1054.2
7.5°	1503.4	1460.3	1343.9	1216.1	1077.3	964.7	862.7	773.2	741.3	708.6	689.5
10°	1479.5	1420.4	1255.3	1069.3	873.8	708.6	565.0	452.5	405.4	371.0	354.4
12.5°	1486.7	1408.4	1189.0	936.0	679.0	469.2	319.2	237.0	208.3	192.3	186.7
15°	1510.6	1410.9	1129.1	806.0	494.0	284.1	187.5	160.4	158.0	157.2	156.4
17.5°	1532.9	1413.2	1066.1	670.3	330.4	181.2	150.8	148.4	148.4	148.4	148.4
20°	1556.1	1414.0	996.7	528.3	217.1	148.4	142.1	140.5	142.1	142.1	142.1
22.5°	1583.2	1419.7	929.7	390.3	160.4	139.6	135.6	134.8	135.6	135.6	134.8
25°	1616.7	1431.6	857.0	279.3	145.3	134.1	130.1	129.3	130.1	129.3	129.3
27.5°	1661.4	1447.6	772.4	200.3	138.8	128.5	124.5	124.5	124.5	123.7	123.7
30°	1718.9	1466.7	659.1	158.0	132.5	122.9	119.7	119.7	118.9	118.2	118.2
32.5°	1801.0	1497.8	535.4	142.8	125.3	115.7	112.5	113.3	112.5	111.7	110.9
35°	1917.5	1546.5	413.4	134.8	118.2	108.5	105.4	105.4	105.4	103.7	103.7
37.5°	2082.7	1620.7	309.6	126.8	110.9	101.4	97.4	97.4	96.6	94.9	95.7
40°	2287.0	1714.1	224.2	119.7	103.7	93.4	90.1	88.6	87.0	85.4	85.4
42.5°	2532.8	1805.0	168.4	112.5	96.6	87.0	83.0	81.4	78.2	76.6	75.8
45°	2808.1	1901.6	139.6	103.7	88.6	79.8	76.6	73.4	69.5	67.0	66.2
47.5°	3040.3	1960.7	124.5	94.9	80.6	72.6	69.5	64.7	59.8	58.2	58.2
50°	3179.9	1935.9	111.7	86.1	72.6	65.5	61.5	55.0	51.9	50.2	49.5
52.5°	3258.2	1862.5	101.4	79.0	65.5	57.5	51.9	46.2	44.7	43.1	43.1
55°	3311.6	1756.4	90.1	71.8	59.0	50.2	43.9	39.9	38.3	37.5	36.7
57.5°	3362.7	1627.1	79.8	65.5	52.7	44.7	37.5	35.9	32.7	31.9	31.9
60°	3377.9	1449.1	70.2	58.2	47.1	39.1	32.7	30.3	27.1	26.3	26.3
62.5°	3184.8	1153.1	62.2	49.5	41.5	33.6	28.7	25.6	22.3	22.3	22.3
65°	2661.3	782.9	53.5	43.1	36.7	28.7	24.8	20.8	19.1	19.1	19.1
67.5°	1853.7	436.5	45.5	36.7	31.1	23.9	20.8	17.6	16.8	17.6	17.6
70°	835.4	173.2	38.3	30.3	25.6	19.9	17.6	15.1	16.8	16.8	16.8
72°	250.5	92.6	31.9	24.8	20.8	17.6	15.1	14.3	16.0	16.8	16.8
72.5°	186.0	83.0	30.3	23.9	20.8	16.8	14.3	14.3	16.0	16.8	16.8
75°	95.7	56.7	23.1	17.6	15.1	13.6	12.0	13.6	16.0	16.0	16.0
77.5°	75.0	46.2	19.1	13.6	12.8	12.0	11.2	12.8	14.3	14.3	14.3
80°	70.2	30.3	15.1	12.8	11.2	10.3	10.3	11.2	12.8	13.6	13.6
82.5°	71.0	24.8	13.6	12.0	10.3	9.6	9.6	10.3	12.0	12.8	12.8
85°	45.5	16.8	12.0	10.3	9.6	8.8	8.8	9.6	11.2	12.0	12.0
87.5°	15.1	12.8	10.3	9.6	8.0	8.0	8.0	8.0	9.6	10.3	11.2
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)