

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: P196278

Luminaire Tested: **NAV-AF-06-D-UNV-T2R-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196278
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24459)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-06-D-UNV-T2R-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(6) 70 CRI, 4000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II
ROADWAY OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 25441.8 lumens
Efficiency: N/A
Efficacy: 131.8 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type II - Short - Semi-Cutoff
BUG Rating: B3 - U0 - G3

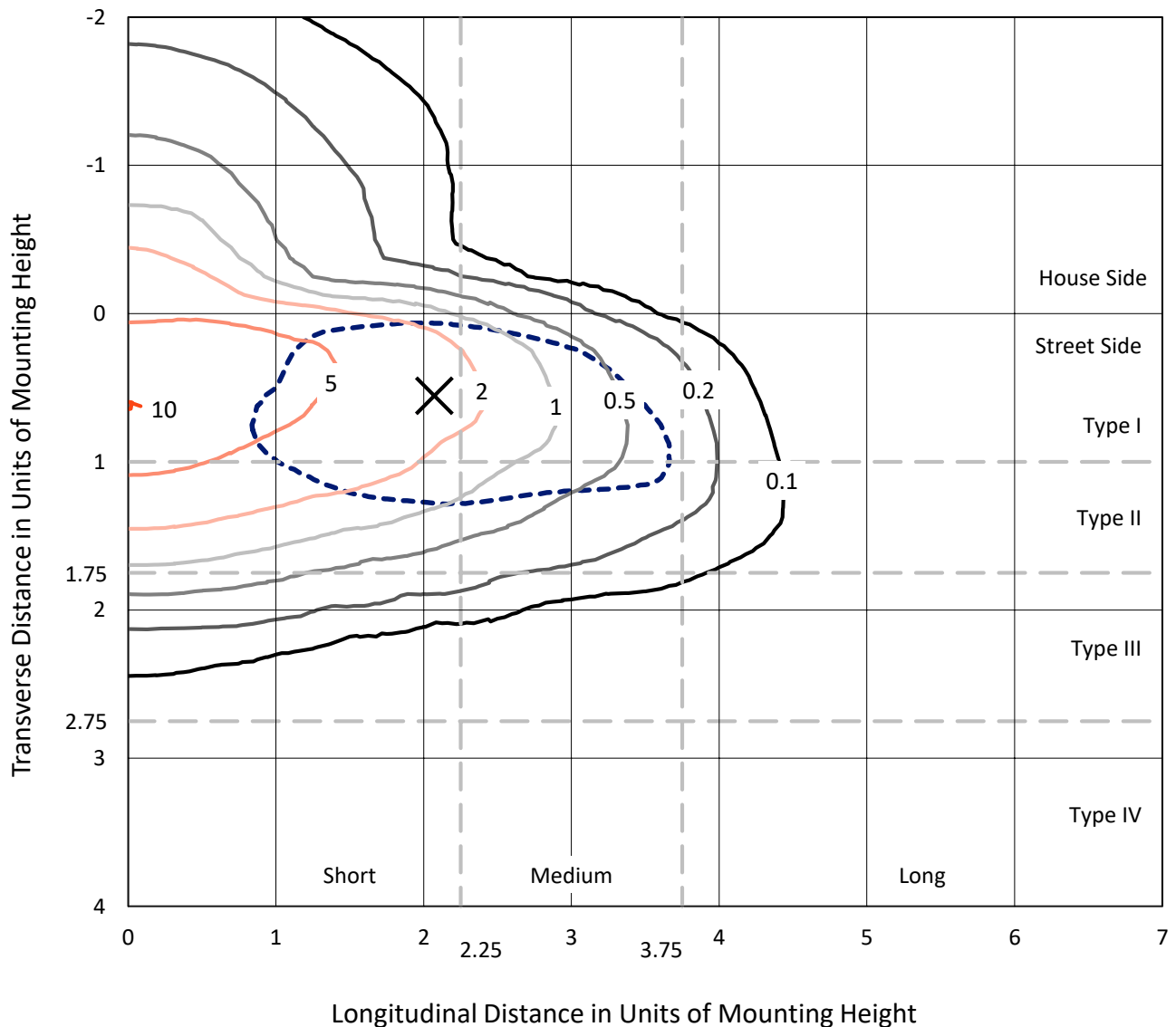
Input Watts (W): 193
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



REPORT NUMBER: P196278
 CATALOG NUMBER: NAV-AF-06-D-UNV-T2R-600

Iso-Footcandle Lines of Horizontal Illumination

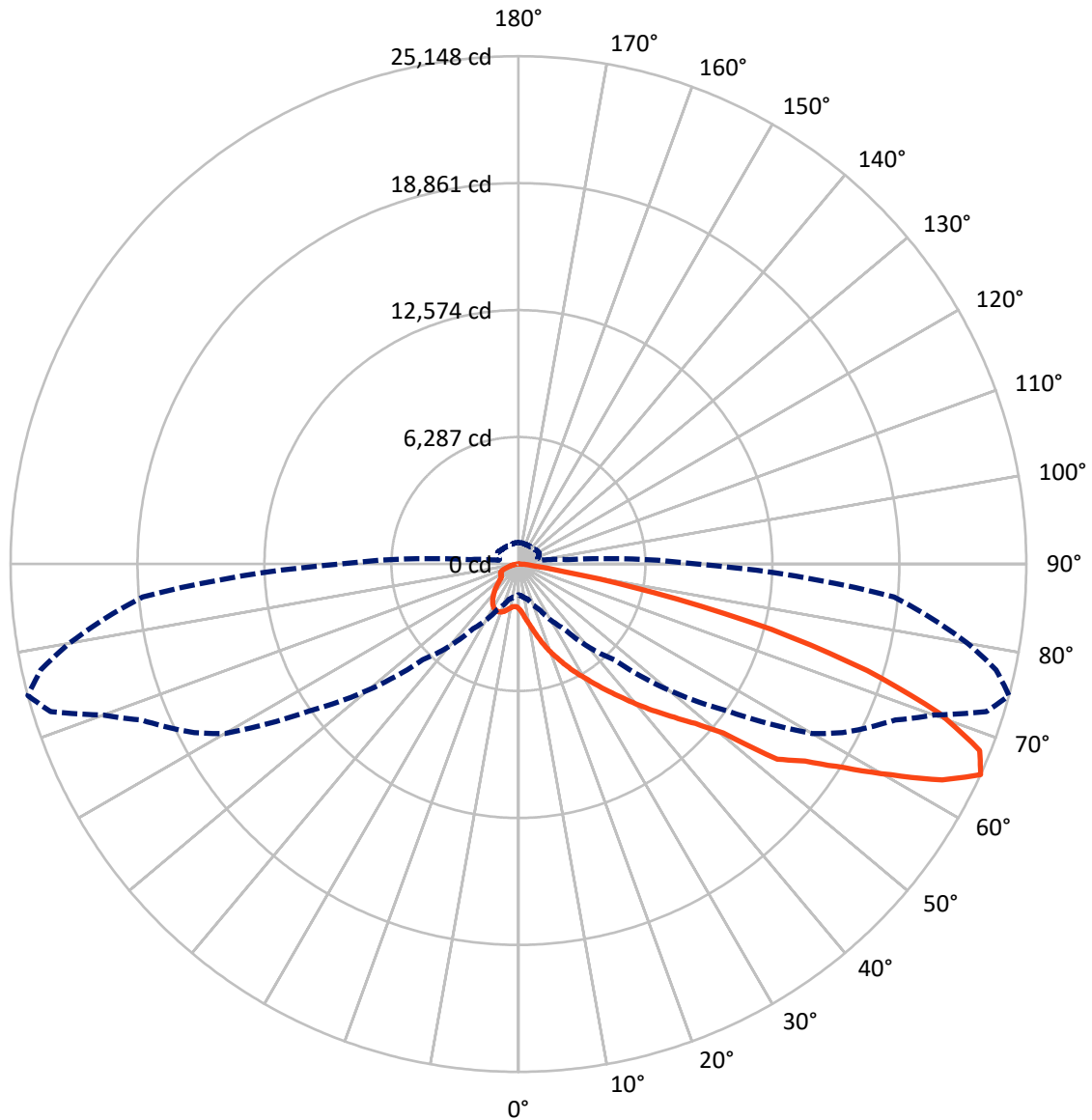
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 10.1 fc
 Type II - Short - Semi-Cutoff

REPORT NUMBER: P196278
CATALOG NUMBER: NAV-AF-06-D-UNV-T2R-600

Luminous Intensity Polar Plot



— Vertical Plane Through 75-Deg Lateral - - - Horizontal Cone Through 65-Deg Vertical

REPORT NUMBER: P196278

CATALOG NUMBER: NAV-AF-06-D-UNV-T2R-600

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	3823.0	0.0	3823.0
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	21618.8	0.0	21618.8
	% Fixture	85.0	0.0	85.0
Total	Lumens	25441.8	0.0	25441.8
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	260.2	1.0
10°-20°	994.0	3.9
20°-30°	2006.0	7.9
30°-40°	3406.7	13.4
40°-50°	4751.5	18.7
50°-60°	5823.6	22.9
60°-70°	5479.2	21.5
70°-80°	2402.6	9.4
80°-90°	317.9	1.2
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°	25441.8	100.0
0°-180°	25441.8	100.0



REPORT NUMBER: P196278

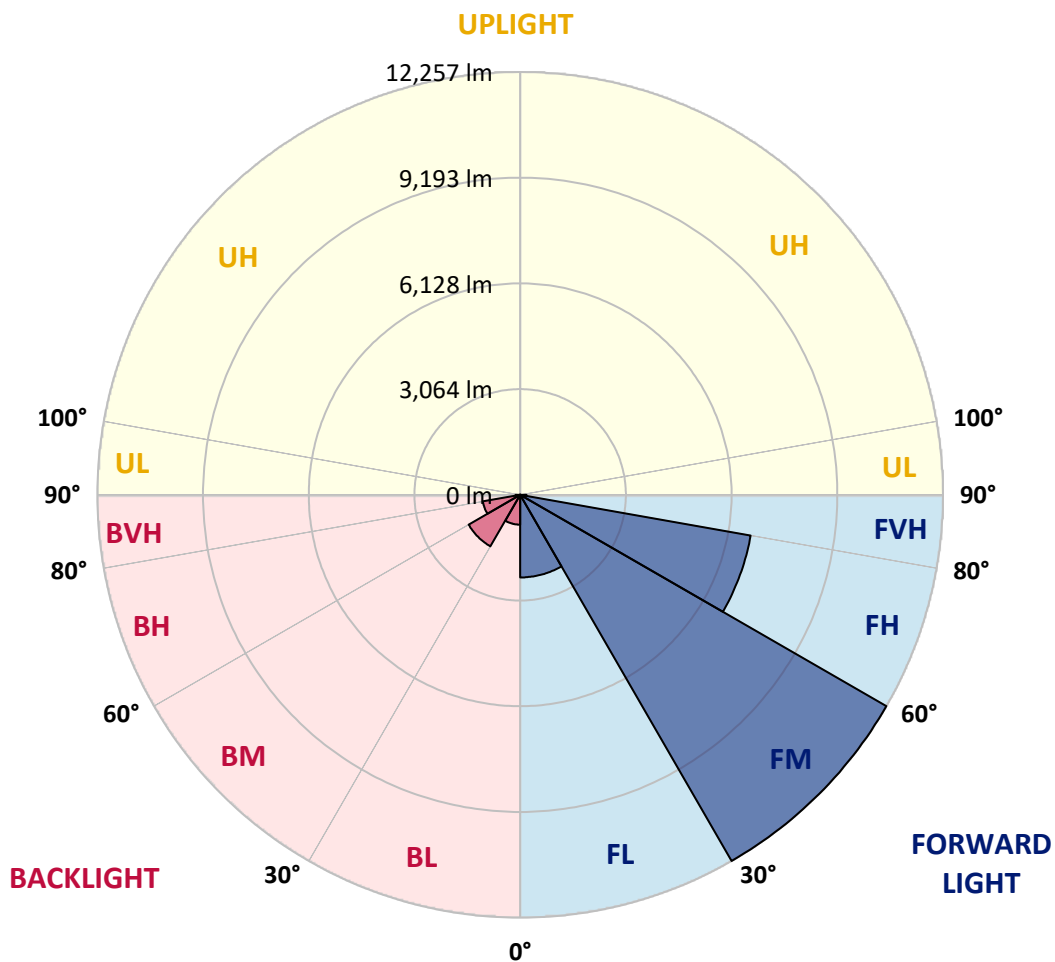
CATALOG NUMBER: NAV-AF-06-D-UNV-T2R-600

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	2394.8	9.4			
FM (30°-60°)	12256.7	48.2			
FH (60°-80°)	6783.0	26.7			G3/7500
FVH (80°-90°)	184.3	0.7			G2/225
BL (0°-30°)	865.4	3.4	B2/1000		
BM (30°-60°)	1725.2	6.8	B2/2500		
BH (60°-80°)	1098.8	4.3	B3/2500		G3/2500
BVH (80°-90°)	133.6	0.5			G2/225
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

BUG Rating: B3-U0-G3

Type II Short





REPORT NUMBER: P196278

CATALOG NUMBER: NAV-AF-06-D-UNV-T2R-600

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	57.5°	60°	62.5°	65°
0°	2204.4	2204.4	2204.4	2204.4	2204.4	2204.4	2204.4	2204.4	2204.4	2204.4	2204.4
2.5°	2775.7	2743.3	2746.5	2701.2	2634.9	2562.1	2502.1	2469.8	2442.3	2434.2	2388.9
5°	3630.2	3589.8	3575.2	3471.7	3316.3	3131.8	2948.9	2877.7	2819.4	2783.8	2696.4
7.5°	4329.4	4308.4	4289.0	4193.5	4039.7	3803.4	3508.9	3403.7	3306.6	3199.8	3094.5
10°	4805.3	4797.2	4789.1	4722.8	4594.9	4389.4	4072.1	3957.2	3835.9	3699.8	3562.3
12.5°	5164.6	5164.6	5171.0	5116.0	5038.3	4879.8	4591.6	4484.8	4361.9	4219.4	4062.4
15°	5405.8	5412.2	5446.2	5462.4	5421.9	5320.0	5067.5	4973.6	4857.1	4716.3	4560.9
17.5°	5566.0	5579.0	5629.1	5682.5	5734.3	5698.7	5510.9	5423.6	5318.3	5188.8	5043.2
20°	5938.2	5922.1	5923.7	5907.4	5983.5	6011.1	5907.4	5834.6	5750.5	5632.4	5499.6
22.5°	6720.0	6689.2	6609.9	6407.6	6315.3	6305.6	6244.1	6205.3	6140.6	6066.1	5933.3
25°	7739.6	7703.9	7547.0	7213.5	6938.5	6684.4	6571.0	6546.8	6504.7	6454.5	6359.1
27.5°	8793.2	8754.4	8552.1	8131.2	7772.0	7258.9	6906.0	6873.7	6834.8	6813.8	6768.5
30°	9720.6	9678.5	9479.5	9052.2	8618.5	8006.6	7357.7	7244.3	7177.9	7184.5	7158.6
32.5°	10534.8	10497.5	10274.1	9838.7	9398.6	8804.5	7943.5	7767.1	7618.2	7563.2	7582.6
35°	11217.7	11183.7	10939.3	10500.7	10057.2	9563.7	8697.7	8432.3	8189.5	8037.4	8019.6
37.5°	11619.1	11599.6	11428.1	11055.8	10615.7	10253.1	9542.6	9248.0	8890.4	8668.6	8571.5
40°	11596.5	11617.4	11588.4	11420.0	11078.6	10814.7	10423.1	10131.7	9782.2	9452.0	9254.5
42.5°	11266.3	11295.4	11426.5	11513.9	11421.7	11261.5	11191.8	10974.9	10661.0	10311.3	10037.8
45°	10813.1	10839.0	11008.9	11324.6	11588.4	11633.7	11865.1	11756.7	11491.2	11193.4	10892.4
47.5°	10118.7	10168.9	10366.4	10868.1	11496.1	11933.1	12430.0	12480.1	12326.4	12080.3	11798.7
50°	9113.7	9180.1	9456.8	10170.6	11146.5	12240.6	13269.9	13460.9	13399.4	13150.2	12865.3
52.5°	8084.4	8150.7	8519.7	9278.8	10583.2	12366.9	14097.0	14585.7	14938.7	15195.9	15246.2
55°	7012.9	7087.3	7492.0	8366.0	9832.3	12206.7	14687.7	15242.9	15600.6	15869.2	15977.7
57.5°	5803.9	5888.0	6279.7	7163.4	8770.6	11562.4	15344.9	16131.4	16664.0	17078.3	17311.3
60°	4416.9	4522.1	4928.3	5818.4	7375.5	10329.1	15637.8	16801.5	17647.9	18269.5	18638.5
62.5°	2800.0	2906.8	3329.2	4253.4	5787.8	8644.3	14809.2	16506.9	17950.6	18870.0	19546.4
65°	1527.9	1574.8	1809.5	2505.4	3902.1	6707.0	12708.3	14710.4	16790.2	18093.0	19132.1
67.5°	1145.9	1152.4	1176.6	1346.6	2078.1	4528.5	9935.9	11769.7	14079.2	15756.0	16997.4
70°	1003.4	1003.4	1006.7	1008.3	1128.1	2453.6	6731.3	8419.4	10536.3	12232.5	13775.0
72.5°	899.9	890.2	886.9	867.5	883.7	1257.5	3664.2	5180.7	6966.0	8869.3	10308.2
75°	776.8	775.3	775.3	755.9	765.6	885.3	1589.4	2486.0	3869.8	5642.1	7058.3
77.5°	671.7	660.3	662.0	650.6	681.4	678.1	754.2	1024.5	1684.8	2963.5	4138.4
80°	553.5	545.4	550.2	543.8	592.4	501.8	508.2	626.4	836.8	1299.7	1832.1
82.5°	409.5	412.8	443.4	440.3	498.5	338.3	372.3	467.7	563.2	647.4	704.0
85°	239.6	244.4	318.9	335.0	365.8	178.0	228.2	278.3	313.9	348.0	362.5
87.5°	25.9	34.0	178.0	182.9	163.5	53.4	92.3	116.5	124.6	132.7	116.5
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: P196278

CATALOG NUMBER: NAV-AF-06-D-UNV-T2R-600

CANDELA DISTRIBUTION (continued):

	67.5°	70°	72.5°	75°	77.5°	80°	85°	90°	95°	100°	102.5°
0°	2204.4	2204.4	2204.4	2204.4	2204.4	2204.4	2204.4	2204.4	2204.4	2204.4	2204.4
2.5°	2374.3	2353.3	2330.6	2317.7	2295.0	2275.6	2240.0	2210.8	2178.5	2155.9	2146.2
5°	2652.7	2602.5	2549.1	2510.3	2461.7	2419.6	2338.7	2241.6	2210.8	2146.2	2129.9
7.5°	3015.2	2924.6	2834.0	2759.5	2675.3	2605.8	2469.8	2295.0	2272.4	2168.8	2146.2
10°	3440.9	3308.2	3173.8	3058.9	2936.0	2829.1	2628.4	2382.5	2358.1	2225.4	2202.7
12.5°	3916.8	3754.8	3581.7	3410.1	3264.4	3114.0	2840.4	2518.4	2479.5	2322.5	2291.8
15°	4407.2	4232.4	4031.7	3824.5	3644.9	3445.7	3101.0	2696.4	2625.2	2440.7	2398.6
17.5°	4891.0	4701.7	4491.3	4259.9	4049.5	3811.5	3382.6	2895.5	2772.5	2557.2	2503.8
20°	5358.8	5166.2	4944.4	4717.8	4455.7	4183.8	3670.8	3091.4	2903.5	2654.4	2584.7
22.5°	5784.5	5619.4	5397.6	5137.1	4871.6	4565.7	3963.6	3287.2	3018.5	2728.7	2639.7
25°	6232.7	6082.3	5862.1	5611.3	5302.2	4962.2	4266.3	3473.2	3110.7	2769.2	2659.2
27.5°	6686.0	6556.5	6349.4	6085.5	5753.7	5376.6	4573.8	3644.9	3185.2	2782.2	2649.4
30°	7169.9	7069.5	6878.5	6584.0	6249.0	5831.4	4908.8	3813.2	3232.1	2764.4	2605.8
32.5°	7627.9	7624.7	7454.8	7148.9	6787.9	6328.3	5261.6	3983.1	3256.4	2714.2	2529.7
35°	8103.7	8170.1	8042.2	7750.9	7370.6	6860.7	5651.7	4164.3	3258.0	2625.2	2430.9
37.5°	8644.3	8762.5	8705.8	8429.1	8029.3	7467.6	6109.8	4368.3	3248.3	2502.1	2286.9
40°	9259.3	9421.2	9419.5	9186.5	8759.2	8147.5	6642.2	4596.5	3225.7	2348.4	2117.0
42.5°	9963.4	10156.0	10209.4	9979.6	9547.4	8890.4	7252.4	4847.4	3190.1	2196.3	1937.4
45°	10769.4	10939.3	11039.7	10826.1	10392.3	9699.6	7953.2	5132.2	3146.3	2000.5	1731.8
47.5°	11632.1	11829.5	11980.0	11797.2	11334.3	10622.1	8783.6	5499.6	3130.1	1777.1	1510.1
50°	12701.9	12905.8	13231.2	13148.6	12894.5	12321.5	10539.6	6367.2	3136.7	1565.1	1323.9
52.5°	15356.2	15823.9	16235.0	16052.1	15448.4	14466.1	11967.1	6849.5	3000.6	1391.9	1194.4
55°	16157.3	16688.2	17295.1	17219.0	16639.6	15649.1	13095.2	7252.4	2869.6	1265.7	1110.3
57.5°	17559.0	18185.3	19033.4	19017.2	18306.7	17191.5	14547.0	7734.7	2812.9	1192.9	1068.2
60°	19043.2	19841.1	21012.8	21195.6	20423.6	19263.2	16262.6	8327.1	2821.0	1152.4	1043.9
62.5°	20127.5	21297.6	23001.9	23548.9	22639.3	21360.7	18042.9	8919.5	2772.5	1105.4	1014.8
65°	20193.9	21878.7	24296.7	25148.0	24227.2	22584.3	18670.9	8802.9	2481.2	1042.3	967.8
67.5°	18575.4	20770.0	23707.6	24641.5	23699.5	21830.2	17570.3	7695.9	2016.6	932.2	886.9
70°	15471.1	18018.6	21067.8	22108.5	21330.1	19438.0	15291.5	6147.0	1506.8	786.5	765.6
72.5°	11955.7	14331.6	17100.9	18063.9	17468.3	15804.5	12061.0	4480.0	1076.2	637.7	621.5
75°	8547.3	10570.4	12580.5	12947.9	12360.4	10832.5	7825.4	2798.4	754.2	522.7	500.1
77.5°	5292.4	6608.3	7330.2	6857.6	6108.1	5077.2	3185.2	1382.2	501.8	425.6	403.0
80°	2348.4	2756.2	2573.4	2293.4	1811.1	1489.0	972.7	613.4	323.7	328.6	315.6
82.5°	789.8	835.1	812.5	807.6	728.3	637.7	412.8	265.5	181.3	210.4	205.5
85°	385.2	403.0	404.6	419.2	364.2	283.3	111.7	105.2	77.6	113.3	118.2
87.5°	116.5	118.2	106.8	116.5	93.9	64.8	21.1	29.2	14.5	27.5	27.5
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: P196278

CATALOG NUMBER: NAV-AF-06-D-UNV-T2R-600

CANDELA DISTRIBUTION (continued):

	105°	107.5°	110°	112.5°	115°	117.5°	120°	122.5°	125°	127.5°	130°
0°	2204.4	2204.4	2204.4	2204.4	2204.4	2204.4	2204.4	2204.4	2204.4	2204.4	2204.4
2.5°	2128.4	2121.8	2110.6	2097.6	2094.3	2078.1	2073.3	2065.2	2060.3	2052.2	2045.8
5°	2108.9	2097.6	2084.6	2070.0	2070.0	2047.3	2037.7	2028.0	2028.0	2013.4	2006.9
7.5°	2128.4	2113.7	2099.2	2086.2	2091.1	2065.2	2055.5	2045.8	2044.2	2029.5	2023.1
10°	2183.4	2168.8	2151.0	2138.1	2133.2	2112.1	2100.8	2086.2	2076.5	2066.8	2057.1
12.5°	2267.5	2248.0	2225.4	2197.9	2186.6	2168.8	2151.0	2131.5	2108.9	2099.2	2084.6
15°	2367.8	2335.5	2304.7	2270.7	2240.0	2222.2	2197.9	2167.1	2136.4	2123.4	2104.0
17.5°	2450.4	2416.4	2372.7	2332.2	2277.2	2262.7	2228.7	2191.5	2141.2	2136.4	2107.3
20°	2519.9	2468.2	2414.8	2366.2	2282.1	2274.0	2231.9	2188.2	2117.0	2117.0	2081.4
22.5°	2558.8	2487.6	2424.5	2359.7	2254.6	2248.0	2199.5	2147.7	2060.3	2063.6	2019.9
25°	2565.3	2479.5	2400.3	2322.5	2201.2	2189.8	2128.4	2071.7	1976.1	1969.7	1924.4
27.5°	2539.4	2439.0	2346.9	2252.9	2121.8	2097.6	2029.5	1961.6	1867.7	1851.5	1803.0
30°	2479.5	2361.4	2257.8	2149.3	2011.7	1973.0	1901.8	1832.1	1736.7	1715.6	1670.3
32.5°	2384.0	2249.7	2134.8	2026.4	1874.3	1825.7	1754.5	1684.8	1592.6	1576.4	1534.3
35°	2257.8	2107.3	1985.9	1871.0	1718.9	1668.6	1600.7	1539.1	1455.0	1448.5	1419.4
37.5°	2099.2	1942.2	1812.7	1702.6	1558.6	1532.7	1463.1	1417.8	1348.2	1354.7	1340.1
40°	1919.6	1759.3	1636.3	1539.1	1414.5	1391.9	1349.8	1315.8	1256.0	1273.8	1275.4
42.5°	1738.3	1578.0	1466.3	1378.9	1272.1	1257.5	1228.5	1209.0	1163.7	1199.3	1213.8
45°	1532.7	1383.8	1288.3	1221.9	1142.6	1142.6	1128.1	1126.5	1095.7	1145.9	1160.4
47.5°	1333.6	1217.1	1150.7	1110.3	1055.3	1081.2	1076.2	1089.2	1066.6	1118.4	1131.3
50°	1183.1	1102.2	1061.7	1042.3	1003.4	1043.9	1053.6	1071.4	1052.0	1097.3	1107.0
52.5°	1087.6	1034.2	1011.6	1006.7	979.2	1029.4	1045.6	1061.7	1039.1	1081.2	1079.5
55°	1034.2	998.6	990.5	1000.2	979.2	1027.8	1043.9	1055.3	1035.8	1065.0	1063.4
57.5°	1014.8	995.3	1000.2	1014.8	1000.2	1040.6	1048.7	1061.7	1042.3	1055.3	1061.7
60°	1013.1	1013.1	1032.6	1052.0	1042.3	1071.4	1076.2	1074.7	1056.9	1058.4	1061.7
62.5°	1003.4	1027.8	1060.1	1090.9	1087.6	1123.2	1126.5	1105.4	1090.9	1074.7	1069.8
65°	972.7	1013.1	1060.1	1102.2	1108.7	1163.7	1170.2	1149.1	1139.4	1111.9	1090.9
67.5°	904.7	956.6	1011.6	1063.4	1074.7	1149.1	1163.7	1171.8	1176.6	1158.8	1131.3
70°	789.8	843.2	899.9	959.7	976.0	1058.4	1089.2	1126.5	1155.6	1181.5	1171.8
72.5°	642.5	691.1	739.7	794.6	819.0	904.7	945.2	1010.0	1055.3	1121.6	1149.1
75°	509.8	539.0	568.0	602.1	621.5	705.6	755.9	833.5	895.0	987.2	1048.7
77.5°	401.4	415.9	430.6	445.1	453.2	500.1	540.5	618.3	689.5	806.0	896.6
80°	309.1	317.2	318.9	323.7	320.5	343.1	357.7	404.6	466.2	581.0	687.8
82.5°	199.1	205.5	208.8	216.9	200.7	229.9	239.6	244.4	276.8	360.9	437.0
85°	111.7	113.3	114.9	118.2	95.4	124.6	126.2	118.2	114.9	148.9	168.3
87.5°	27.5	25.9	27.5	27.5	11.4	25.9	25.9	17.8	13.0	24.2	19.4
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: P196278

CATALOG NUMBER: NAV-AF-06-D-UNV-T2R-600

CANDELA DISTRIBUTION (continued):

	135°	145°	155°	165°	175°	180°
0°	2204.4	2204.4	2204.4	2204.4	2204.4	2204.4
2.5°	2031.2	2028.0	2029.5	2021.5	2018.3	2019.9
5°	1998.8	1992.4	1992.4	1987.5	1981.0	1981.0
7.5°	2013.4	2000.5	1995.6	1985.9	1976.1	1977.8
10°	2036.1	2013.4	1997.2	1982.7	1971.3	1971.3
12.5°	2050.6	2010.2	1985.9	1966.4	1953.5	1953.5
15°	2053.9	1992.4	1956.7	1935.7	1922.7	1922.7
17.5°	2034.4	1956.7	1911.4	1883.9	1869.3	1872.6
20°	1985.9	1890.4	1837.0	1807.9	1793.2	1794.9
22.5°	1909.8	1799.8	1738.3	1704.2	1689.7	1689.7
25°	1806.2	1686.4	1620.1	1592.6	1579.6	1579.6
27.5°	1688.1	1565.1	1506.8	1485.7	1477.7	1477.7
30°	1555.4	1453.4	1411.4	1396.7	1383.8	1383.8
32.5°	1443.7	1370.9	1356.3	1336.9	1302.8	1301.3
35°	1354.7	1346.6	1335.3	1276.9	1228.5	1221.9
37.5°	1306.1	1354.7	1283.5	1183.1	1144.3	1142.6
40°	1280.2	1325.5	1202.6	1154.0	1149.1	1149.1
42.5°	1218.7	1251.1	1197.7	1170.2	1170.2	1171.8
45°	1154.0	1181.5	1209.0	1184.8	1192.9	1194.4
47.5°	1108.7	1163.7	1209.0	1188.0	1204.1	1213.8
50°	1066.6	1147.5	1184.8	1184.8	1202.6	1204.1
52.5°	1056.9	1124.8	1162.1	1179.9	1181.5	1173.4
55°	1058.4	1107.0	1144.3	1166.9	1157.3	1157.3
57.5°	1056.9	1097.3	1129.7	1137.8	1142.6	1142.6
60°	1058.4	1084.4	1110.3	1107.0	1123.2	1123.2
62.5°	1063.4	1066.6	1079.5	1076.2	1100.6	1100.6
65°	1074.7	1043.9	1035.8	1039.1	1068.2	1066.6
67.5°	1095.7	1013.1	987.2	988.9	1030.9	1024.5
70°	1126.5	971.1	932.2	922.5	993.8	982.4
72.5°	1136.2	922.5	861.0	851.3	893.4	861.0
75°	1090.9	883.7	785.0	752.6	734.8	725.1
77.5°	972.7	859.4	705.6	637.7	610.2	603.7
80°	806.0	809.3	602.1	521.2	605.3	603.7
82.5°	608.6	699.2	482.3	451.5	438.6	365.8
85°	294.6	526.0	370.6	310.8	186.1	176.5
87.5°	25.9	220.1	213.6	139.2	63.1	59.8
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)