

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: P196292

Luminaire Tested: **NAV-AF-02-D-UNV-T2R-1200**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196292  
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-02-D-UNV-T2R-1200  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(2) 70 CRI, 4000K, 1200mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II  
ROADWAY OPTICS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 14324.4 lumens  
Efficiency: N/A  
Efficacy: 111.0 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')  
IES Classification: Type II - Short - Semi-Cutoff  
BUG Rating: B2 - U0 - G2

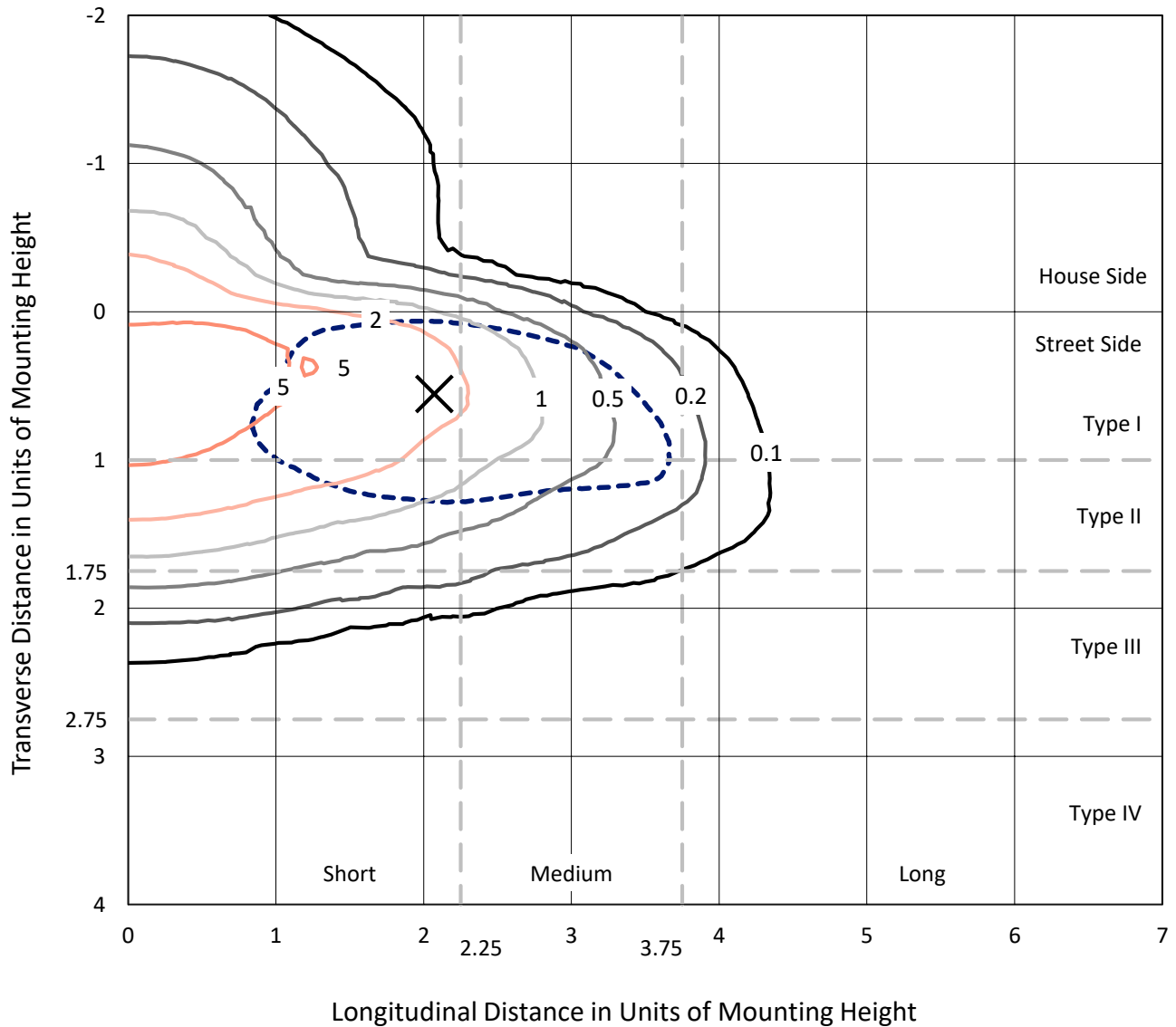
Input Watts (W): 129  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



REPORT NUMBER: P196292  
 CATALOG NUMBER: NAV-AF-02-D-UNV-T2R-1200

### Iso-Footcandle Lines of Horizontal Illumination

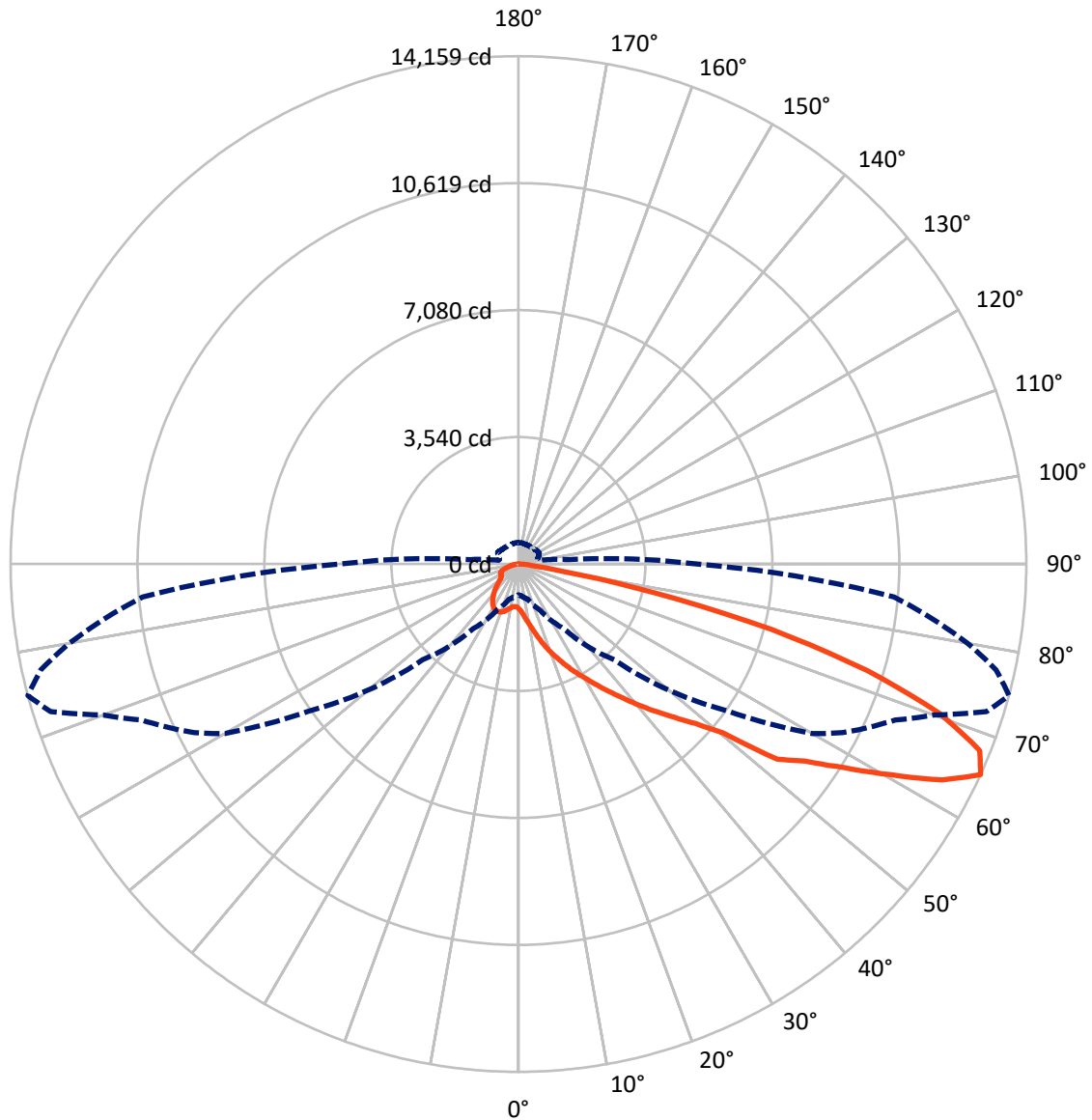
× Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 8.9 fc  
 Type II - Short - Semi-Cutoff

REPORT NUMBER: P196292  
CATALOG NUMBER: NAV-AF-02-D-UNV-T2R-1200

### Luminous Intensity Polar Plot



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

REPORT NUMBER: P196292

CATALOG NUMBER: NAV-AF-02-D-UNV-T2R-1200

**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	2152.5	0.0	2152.5
	% Fixture	15.0	0.0	15.0
<b>Street Side</b>	Lumens	12171.9	0.0	12171.9
	% Fixture	85.0	0.0	85.0
<b>Total</b>	Lumens	14324.4	0.0	14324.4
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	146.5	1.0
10°-20°	559.6	3.9
20°-30°	1129.4	7.9
30°-40°	1918.1	13.4
40°-50°	2675.2	18.7
50°-60°	3278.8	22.9
60°-70°	3084.9	21.5
70°-80°	1352.7	9.4
80°-90°	179.0	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°	14324.4	100.0
0°-180°	14324.4	100.0



REPORT NUMBER: P196292

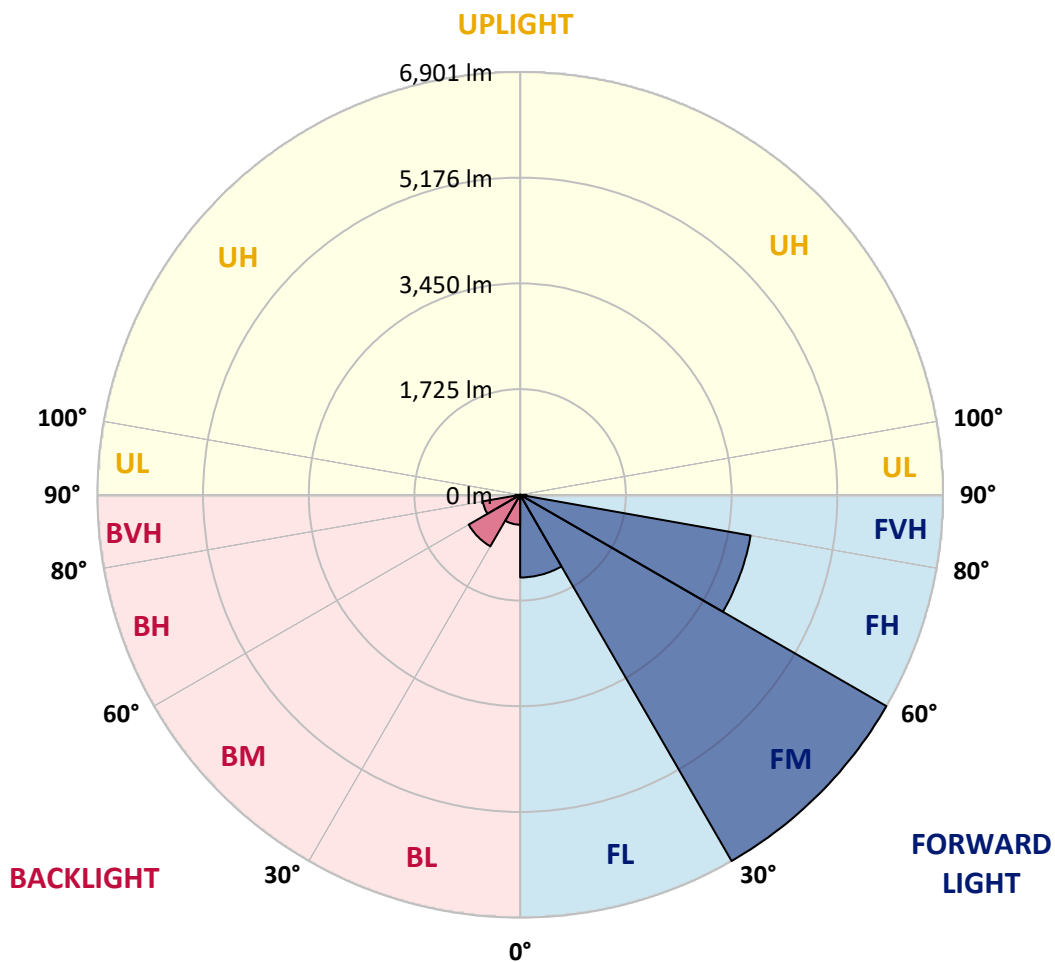
CATALOG NUMBER: NAV-AF-02-D-UNV-T2R-1200

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

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1348.3	9.4			
FM	(30°-60°)	6900.8	48.2			
FH	(60°-80°)	3819.0	26.7			G2/5000
FVH	(80°-90°)	103.8	0.7			G2/225
BL	(0°-30°)	487.3	3.4	B1/500		
BM	(30°-60°)	971.3	6.8	B1/1000		
BH	(60°-80°)	618.7	4.3	B2/1000		G2/1000
BVH	(80°-90°)	75.2	0.5			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B2-U0-G2**

Type II Short





REPORT NUMBER: P196292

CATALOG NUMBER: NAV-AF-02-D-UNV-T2R-1200

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	57.5°	60°	62.5°	65°
0°	1241.1	1241.1	1241.1	1241.1	1241.1	1241.1	1241.1	1241.1	1241.1	1241.1	1241.1
2.5°	1562.8	1544.6	1546.4	1520.9	1483.5	1442.5	1408.8	1390.6	1375.1	1370.5	1345.0
5°	2044.0	2021.1	2013.0	1954.7	1867.2	1763.3	1660.2	1620.1	1587.4	1567.4	1518.2
7.5°	2437.6	2425.7	2414.8	2361.1	2274.4	2141.4	1975.6	1916.4	1861.7	1801.5	1742.3
10°	2705.5	2700.9	2696.4	2659.1	2587.0	2471.3	2292.7	2228.0	2159.7	2083.1	2005.7
12.5°	2907.8	2907.8	2911.4	2880.4	2836.7	2747.4	2585.2	2525.1	2455.8	2375.6	2287.2
15°	3043.6	3047.2	3066.4	3075.5	3052.7	2995.3	2853.1	2800.2	2734.7	2655.4	2567.9
17.5°	3133.8	3141.1	3169.3	3199.4	3228.5	3208.5	3102.8	3053.6	2994.4	2921.4	2839.4
20°	3343.4	3334.2	3335.1	3326.0	3368.9	3384.3	3326.0	3285.0	3237.6	3171.1	3096.5
22.5°	3783.5	3766.2	3721.5	3607.6	3555.7	3550.3	3515.6	3493.7	3457.3	3415.3	3340.7
25°	4357.6	4337.5	4249.1	4061.4	3906.5	3763.4	3699.7	3686.0	3662.3	3634.0	3580.3
27.5°	4950.8	4929.0	4815.0	4578.1	4375.8	4087.0	3888.3	3870.0	3848.2	3836.4	3810.8
30°	5473.0	5449.3	5337.1	5096.6	4852.4	4507.9	4142.5	4078.7	4041.4	4045.1	4030.4
32.5°	5931.3	5910.4	5784.6	5539.5	5291.6	4957.2	4472.4	4373.1	4289.2	4258.2	4269.2
35°	6315.9	6296.8	6159.1	5912.1	5662.5	5384.6	4897.1	4747.6	4611.0	4525.2	4515.2
37.5°	6541.9	6530.9	6434.4	6224.8	5976.9	5772.7	5372.7	5206.9	5005.5	4880.6	4826.0
40°	6529.1	6541.0	6524.6	6429.8	6237.4	6088.9	5868.5	5704.4	5507.6	5321.7	5210.5
42.5°	6343.2	6359.6	6433.4	6482.6	6430.7	6340.5	6301.3	6179.1	6002.4	5805.6	5651.6
45°	6088.1	6102.6	6198.3	6376.1	6524.6	6550.1	6680.4	6619.3	6469.9	6302.2	6132.7
47.5°	5697.1	5725.4	5836.5	6119.0	6472.6	6718.6	6998.4	7026.6	6940.1	6801.6	6643.0
50°	5131.2	5168.6	5324.5	5726.3	6275.8	6891.7	7471.3	7578.8	7544.3	7403.9	7243.5
52.5°	4551.7	4589.1	4796.8	5224.2	5958.7	6962.8	7937.0	8212.1	8410.8	8555.8	8584.0
55°	3948.5	3990.3	4218.1	4710.3	5535.8	6872.6	8269.5	8582.1	8783.6	8934.8	8995.8
57.5°	3267.7	3315.1	3535.6	4033.2	4938.1	6510.0	8639.5	9082.4	9382.2	9615.5	9746.7
60°	2486.8	2546.0	2774.8	3275.9	4152.6	5815.6	8804.4	9459.6	9936.2	10286.2	10493.9
62.5°	1576.5	1636.6	1874.5	2394.7	3258.6	4867.0	8338.0	9293.8	10106.7	10624.3	11005.1
65°	860.2	886.7	1018.8	1410.6	2197.0	3776.2	7155.1	8282.3	9453.3	10186.9	10771.9
67.5°	645.2	648.9	662.5	758.1	1170.1	2549.7	5594.1	6626.6	7926.9	8871.0	9569.9
70°	565.0	565.0	566.8	567.7	635.2	1381.5	3789.9	4740.4	5932.2	6887.2	7755.6
72.5°	506.7	501.1	499.4	488.5	497.6	708.1	2063.1	2916.9	3922.0	4993.6	5803.7
75°	437.4	436.5	436.5	425.5	431.1	498.5	894.9	1399.7	2178.8	3176.6	3974.0
77.5°	378.2	371.7	372.7	366.3	383.6	381.8	424.6	576.8	948.6	1668.5	2330.1
80°	311.7	307.1	309.9	306.2	333.5	282.4	286.1	352.6	471.1	731.7	1031.5
82.5°	230.6	232.4	249.7	247.9	280.7	190.5	209.6	263.3	317.1	364.5	396.4
85°	134.8	137.6	179.5	188.6	205.9	100.2	128.5	156.7	176.8	195.9	204.1
87.5°	14.6	19.1	100.2	103.0	92.1	30.1	52.0	65.6	70.2	74.7	65.6
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: P196292  
 CATALOG NUMBER: NAV-AF-02-D-UNV-T2R-1200

**CANDELA DISTRIBUTION (continued):**

	67.5°	70°	72.5°	75°	77.5°	80°	85°	90°	95°	100°	102.5°
0°	1241.1	1241.1	1241.1	1241.1	1241.1	1241.1	1241.1	1241.1	1241.1	1241.1	1241.1
2.5°	1336.8	1324.9	1312.2	1304.9	1292.2	1281.2	1261.2	1244.7	1226.5	1213.8	1208.3
5°	1493.5	1465.3	1435.2	1413.3	1386.0	1362.4	1316.7	1262.1	1244.7	1208.3	1199.2
7.5°	1697.7	1646.6	1595.6	1553.7	1506.3	1467.1	1390.6	1292.2	1279.4	1221.1	1208.3
10°	1937.3	1862.6	1787.0	1722.2	1653.0	1592.8	1479.9	1341.4	1327.7	1253.0	1240.2
12.5°	2205.2	2114.1	2016.5	1920.0	1838.0	1753.2	1599.3	1417.9	1396.0	1307.6	1290.4
15°	2481.4	2383.0	2269.9	2153.3	2052.1	1940.0	1746.0	1518.2	1478.1	1374.1	1350.5
17.5°	2753.8	2647.2	2528.7	2398.4	2280.0	2145.9	1904.5	1630.2	1560.9	1439.8	1409.7
20°	3017.2	2908.7	2783.9	2656.3	2508.7	2355.5	2066.7	1740.4	1634.8	1494.4	1455.2
22.5°	3256.8	3163.9	3039.0	2892.3	2742.8	2570.7	2231.7	1850.7	1699.4	1536.4	1486.2
25°	3509.2	3424.4	3300.6	3159.3	2985.3	2793.9	2402.1	1955.6	1751.4	1559.2	1497.2
27.5°	3764.4	3691.4	3574.8	3426.3	3239.5	3027.1	2575.2	2052.1	1793.3	1566.4	1491.7
30°	4036.9	3980.3	3872.8	3707.0	3518.3	3283.3	2763.8	2146.9	1819.7	1556.4	1467.1
32.5°	4294.8	4292.9	4197.2	4025.0	3821.7	3562.9	2962.5	2242.6	1833.4	1528.2	1424.3
35°	4562.7	4600.0	4528.0	4364.0	4149.8	3862.8	3182.1	2344.6	1834.4	1478.1	1368.7
37.5°	4867.0	4933.5	4901.6	4745.8	4520.7	4204.5	3440.0	2459.5	1828.8	1408.8	1287.6
40°	5213.3	5304.4	5303.5	5172.2	4931.6	4587.2	3739.8	2588.0	1816.1	1322.3	1191.9
42.5°	5609.7	5718.1	5748.2	5618.8	5375.4	5005.5	4083.3	2729.2	1796.1	1236.5	1090.8
45°	6063.4	6159.1	6215.7	6095.4	5851.1	5461.1	4477.9	2889.5	1771.4	1126.3	975.1
47.5°	6549.1	6660.3	6745.0	6642.1	6381.5	5980.5	4945.4	3096.5	1762.3	1000.5	850.2
50°	7151.4	7266.3	7449.4	7403.0	7259.9	6937.3	5934.0	3584.8	1766.0	881.2	745.4
52.5°	8645.9	8909.3	9140.7	9037.8	8697.8	8144.7	6737.8	3856.4	1689.4	783.7	672.5
55°	9097.0	9395.9	9737.6	9694.8	9368.6	8810.9	7372.9	4083.3	1615.6	712.6	625.1
57.5°	9886.1	10238.8	10716.2	10707.1	10307.2	9679.3	8190.3	4354.8	1583.7	671.6	601.4
60°	10721.8	11171.0	11830.7	11933.7	11499.0	10845.6	9156.2	4688.4	1588.3	648.9	587.8
62.5°	11332.2	11991.1	12950.7	13258.7	12746.6	12026.6	10158.6	5021.9	1560.9	622.4	571.3
65°	11369.7	12318.3	13679.6	14159.0	13640.4	12715.6	10512.1	4956.3	1396.9	586.9	544.9
67.5°	10458.4	11694.1	13348.0	13873.8	13343.4	12291.0	9892.5	4333.0	1135.4	524.9	499.4
70°	8710.6	10144.9	11861.7	12447.7	12009.3	10944.0	8609.5	3460.9	848.3	442.8	431.1
72.5°	6731.4	8069.1	9628.2	10170.5	9835.1	8898.3	6790.7	2522.3	606.0	359.1	350.0
75°	4812.3	5951.3	7083.1	7290.0	6959.2	6098.9	4405.8	1575.5	424.6	294.3	281.6
77.5°	2979.8	3720.7	4127.0	3860.9	3439.1	2858.6	1793.3	778.2	282.4	239.7	226.9
80°	1322.3	1551.8	1448.9	1291.3	1019.7	838.3	547.7	345.3	182.3	184.9	177.7
82.5°	444.7	470.3	457.5	454.7	410.1	359.1	232.4	149.5	102.1	118.5	115.7
85°	216.9	226.9	227.8	236.0	205.0	159.5	62.9	59.2	43.8	63.8	66.5
87.5°	65.6	66.5	60.1	65.6	52.9	36.4	11.9	16.4	8.2	15.4	15.4
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: P196292

CATALOG NUMBER: NAV-AF-02-D-UNV-T2R-1200

**CANDELA DISTRIBUTION (continued):**

	105°	107.5°	110°	112.5°	115°	117.5°	120°	122.5°	125°	127.5°	130°
0°	1241.1	1241.1	1241.1	1241.1	1241.1	1241.1	1241.1	1241.1	1241.1	1241.1	1241.1
2.5°	1198.3	1194.6	1188.3	1181.0	1179.2	1170.1	1167.3	1162.8	1160.0	1155.4	1151.8
5°	1187.3	1181.0	1173.7	1165.4	1165.4	1152.8	1147.2	1141.8	1141.8	1133.6	1130.0
7.5°	1198.3	1190.1	1181.9	1174.6	1177.3	1162.8	1157.3	1151.8	1150.9	1142.7	1139.1
10°	1229.3	1221.1	1211.1	1203.8	1201.0	1189.2	1182.8	1174.6	1169.1	1163.7	1158.2
12.5°	1276.6	1265.7	1253.0	1237.5	1231.1	1221.1	1211.1	1200.1	1187.3	1181.9	1173.7
15°	1333.1	1314.9	1297.6	1278.5	1261.2	1251.2	1237.5	1220.2	1202.9	1195.5	1184.6
17.5°	1379.7	1360.5	1335.9	1313.1	1282.2	1273.9	1254.8	1233.8	1205.5	1202.9	1186.4
20°	1418.8	1389.7	1359.6	1332.3	1284.8	1280.3	1256.6	1232.0	1191.9	1191.9	1171.9
22.5°	1440.7	1400.6	1365.0	1328.6	1269.4	1265.7	1238.4	1209.2	1160.0	1161.9	1137.2
25°	1444.3	1396.0	1351.4	1307.6	1239.3	1233.0	1198.3	1166.4	1112.7	1109.0	1083.5
27.5°	1429.8	1373.2	1321.3	1268.5	1194.6	1181.0	1142.7	1104.5	1051.6	1042.5	1015.2
30°	1396.0	1329.5	1271.2	1210.2	1132.7	1110.8	1070.7	1031.5	977.7	966.0	940.4
32.5°	1342.3	1266.6	1202.0	1140.9	1055.3	1027.9	987.8	948.6	896.7	887.5	863.9
35°	1271.2	1186.4	1118.1	1053.4	967.7	939.5	901.2	866.6	819.2	815.6	799.1
37.5°	1181.9	1093.5	1020.6	958.6	877.5	863.0	823.8	798.2	759.0	762.7	754.5
40°	1080.7	990.5	921.3	866.6	796.5	783.7	760.0	740.8	707.2	717.2	718.1
42.5°	978.7	888.4	825.6	776.4	716.3	708.1	691.6	680.7	655.2	675.2	683.4
45°	863.0	779.1	725.4	688.0	643.3	643.3	635.2	634.2	616.9	645.2	653.4
47.5°	750.8	685.3	647.9	625.1	594.1	608.8	606.0	613.3	600.5	629.6	637.0
50°	666.1	620.5	597.8	586.9	565.0	587.8	593.2	603.2	592.3	617.9	623.3
52.5°	612.3	582.3	569.6	566.8	551.3	579.6	588.7	597.8	585.0	608.8	607.8
55°	582.3	562.2	557.7	563.1	551.3	578.7	587.8	594.1	583.2	599.6	598.7
57.5°	571.3	560.4	563.1	571.3	563.1	585.9	590.4	597.8	586.9	594.1	597.8
60°	570.4	570.4	581.3	592.3	586.9	603.2	606.0	605.1	595.1	596.0	597.8
62.5°	565.0	578.7	596.9	614.2	612.3	632.4	634.2	622.4	614.2	605.1	602.3
65°	547.7	570.4	596.9	620.5	624.2	655.2	658.9	647.0	641.5	626.0	614.2
67.5°	509.4	538.6	569.6	598.7	605.1	647.0	655.2	659.7	662.5	652.4	637.0
70°	444.7	474.8	506.7	540.3	549.5	596.0	613.3	634.2	650.6	665.2	659.7
72.5°	361.7	389.1	416.4	447.4	461.0	509.4	532.1	568.7	594.1	631.5	647.0
75°	287.0	303.4	319.9	339.0	350.0	397.3	425.5	469.3	503.9	555.9	590.4
77.5°	226.0	234.2	242.4	250.6	255.1	281.6	304.3	348.1	388.2	453.8	504.8
80°	174.0	178.6	179.5	182.3	180.4	193.2	201.4	227.8	262.5	327.1	387.3
82.5°	112.1	115.7	117.5	122.1	113.0	129.4	134.8	137.6	155.8	203.2	246.0
85°	62.9	63.8	64.7	66.5	53.8	70.2	71.1	66.5	64.7	83.9	94.7
87.5°	15.4	14.6	15.4	15.4	6.3	14.6	14.6	10.0	7.3	13.7	10.9
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: P196292

CATALOG NUMBER: NAV-AF-02-D-UNV-T2R-1200

**CANDELA DISTRIBUTION (continued):**

	135°	145°	155°	165°	175°	180°
0°	1241.1	1241.1	1241.1	1241.1	1241.1	1241.1
2.5°	1143.7	1141.8	1142.7	1138.1	1136.3	1137.2
5°	1125.3	1121.8	1121.8	1119.0	1115.3	1115.3
7.5°	1133.6	1126.3	1123.6	1118.1	1112.7	1113.6
10°	1146.3	1133.6	1124.5	1116.2	1109.9	1109.9
12.5°	1154.5	1131.8	1118.1	1107.1	1099.9	1099.9
15°	1156.3	1121.8	1101.7	1089.9	1082.6	1082.6
17.5°	1145.4	1101.7	1076.1	1060.7	1052.5	1054.4
20°	1118.1	1064.4	1034.3	1017.8	1009.7	1010.6
22.5°	1075.2	1013.3	978.7	959.5	951.3	951.3
25°	1016.9	949.5	912.2	896.7	889.4	889.4
27.5°	950.4	881.2	848.3	836.6	832.0	832.0
30°	875.7	818.3	794.6	786.4	779.1	779.1
32.5°	812.8	771.8	763.6	752.7	733.6	732.6
35°	762.7	758.1	751.8	718.9	691.6	688.0
37.5°	735.4	762.7	722.6	666.1	644.3	643.3
40°	720.8	746.3	677.1	649.7	647.0	647.0
42.5°	686.2	704.4	674.3	658.9	658.9	659.7
45°	649.7	665.2	680.7	667.1	671.6	672.5
47.5°	624.2	655.2	680.7	668.8	678.0	683.4
50°	600.5	646.1	667.1	667.1	677.1	678.0
52.5°	595.1	633.3	654.3	664.3	665.2	660.6
55°	596.0	623.3	644.3	657.0	651.5	651.5
57.5°	595.1	617.9	636.1	640.6	643.3	643.3
60°	596.0	610.5	625.1	623.3	632.4	632.4
62.5°	598.7	600.5	607.8	606.0	619.6	619.6
65°	605.1	587.8	583.2	585.0	601.4	600.5
67.5°	616.9	570.4	555.9	556.8	580.4	576.8
70°	634.2	546.8	524.9	519.5	559.6	553.1
72.5°	639.7	519.5	484.8	479.4	503.0	484.8
75°	614.2	497.6	441.9	423.7	413.7	408.3
77.5°	547.7	483.9	397.3	359.1	343.5	339.9
80°	453.8	455.6	339.0	293.4	340.8	339.9
82.5°	342.6	393.6	271.6	254.2	246.9	205.9
85°	165.8	296.1	208.7	174.9	104.8	99.3
87.5°	14.6	123.9	120.3	78.4	35.5	33.8
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)