

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: P197237

Luminaire Tested: **NAV-AF-05-D-UNV-T2R-8030-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P197237
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-05-D-UNV-T2R-8030-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(5) 80 CRI, 3000K, 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: 16941 lumens
Efficiency: N/A
Efficacy: 104.6 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type II - Short - Semi-Cutoff
BUG Rating: B2 - U0 - G2

Input Watts (W): 162
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

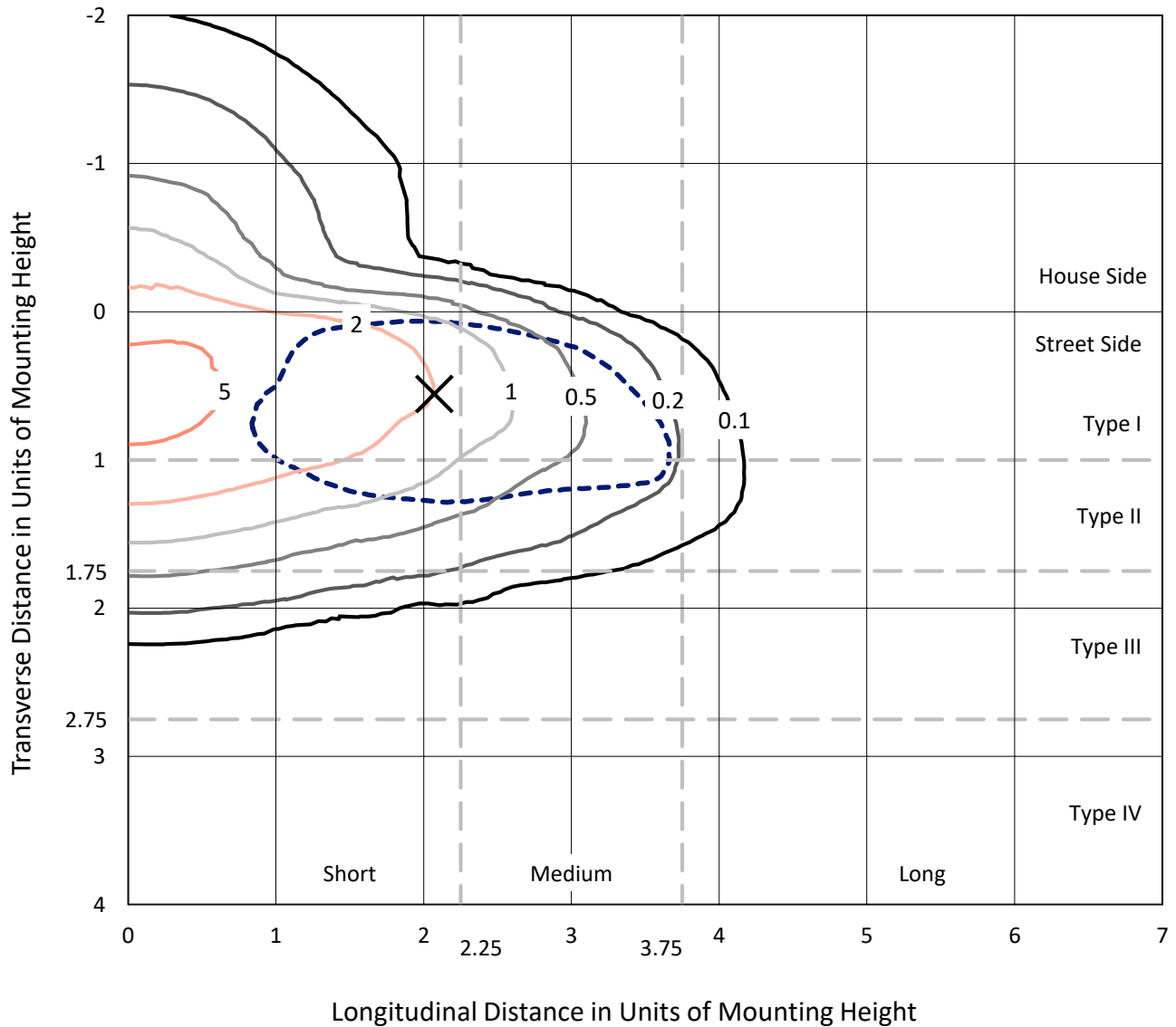


REPORT NUMBER: P197237

CATALOG NUMBER: NAV-AF-05-D-UNV-T2R-8030-600

Iso-Footcandle Lines of Horizontal Illumination

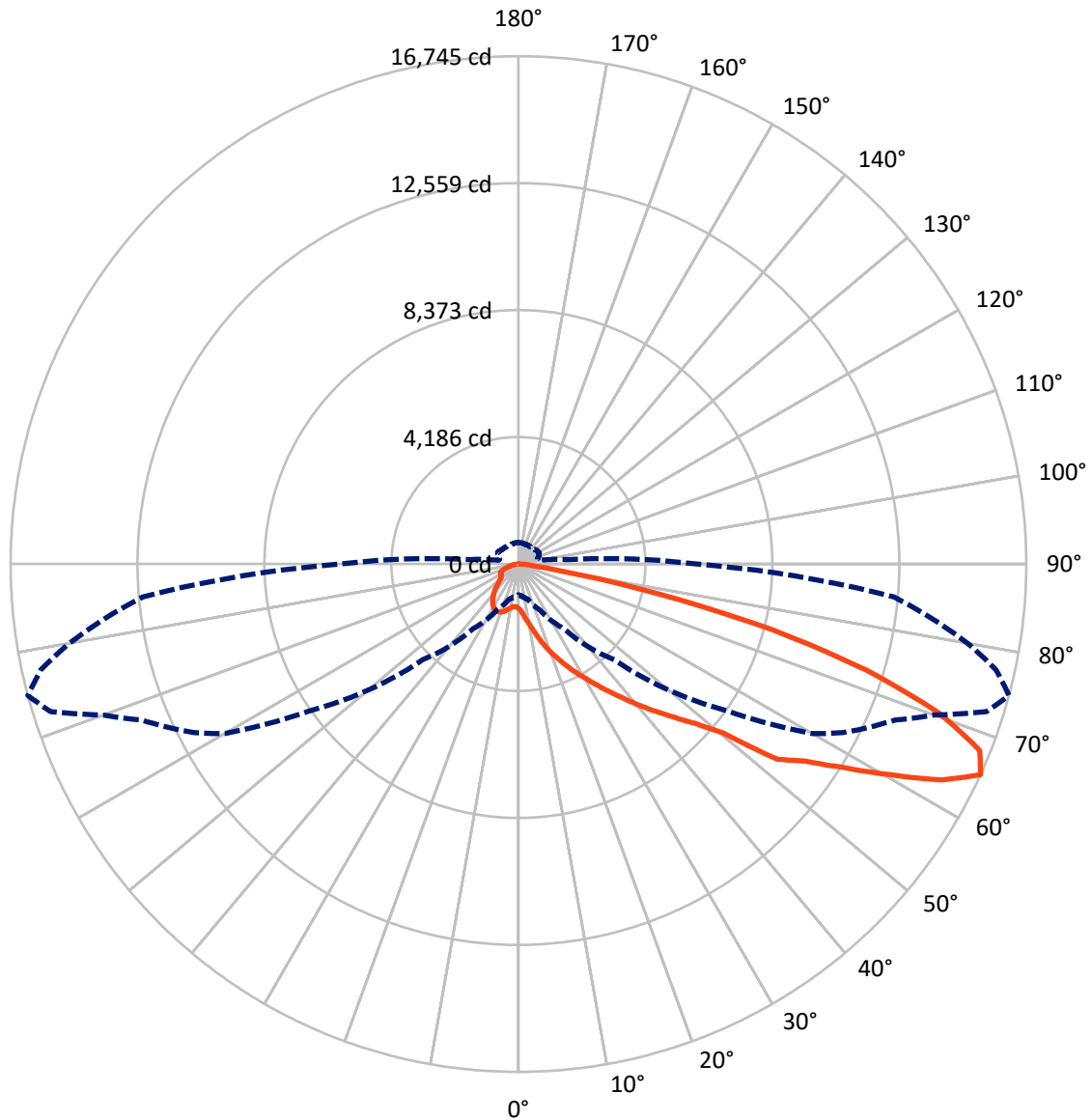
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 6.7 fc
 Type II - Short - Semi-Cutoff

REPORT NUMBER: P197237
CATALOG NUMBER: NAV-AF-05-D-UNV-T2R-8030-600

Luminous Intensity Polar Plot



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

REPORT NUMBER: P197237

CATALOG NUMBER: NAV-AF-05-D-UNV-T2R-8030-600

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2545.6	0.0	2545.6
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	14395.4	0.0	14395.4
	% Fixture	85.0	0.0	85.0
Total	Lumens	16941.0	0.0	16941.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	173.3	1.0
10°-20°	661.9	3.9
20°-30°	1335.7	7.9
30°-40°	2268.4	13.4
40°-50°	3163.9	18.7
50°-60°	3877.8	22.9
60°-70°	3648.5	21.5
70°-80°	1599.8	9.4
80°-90°	211.7	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°	16941.0	100.0
0°-180°	16941.0	100.0

Coefficient of Utilization



REPORT NUMBER: P197237

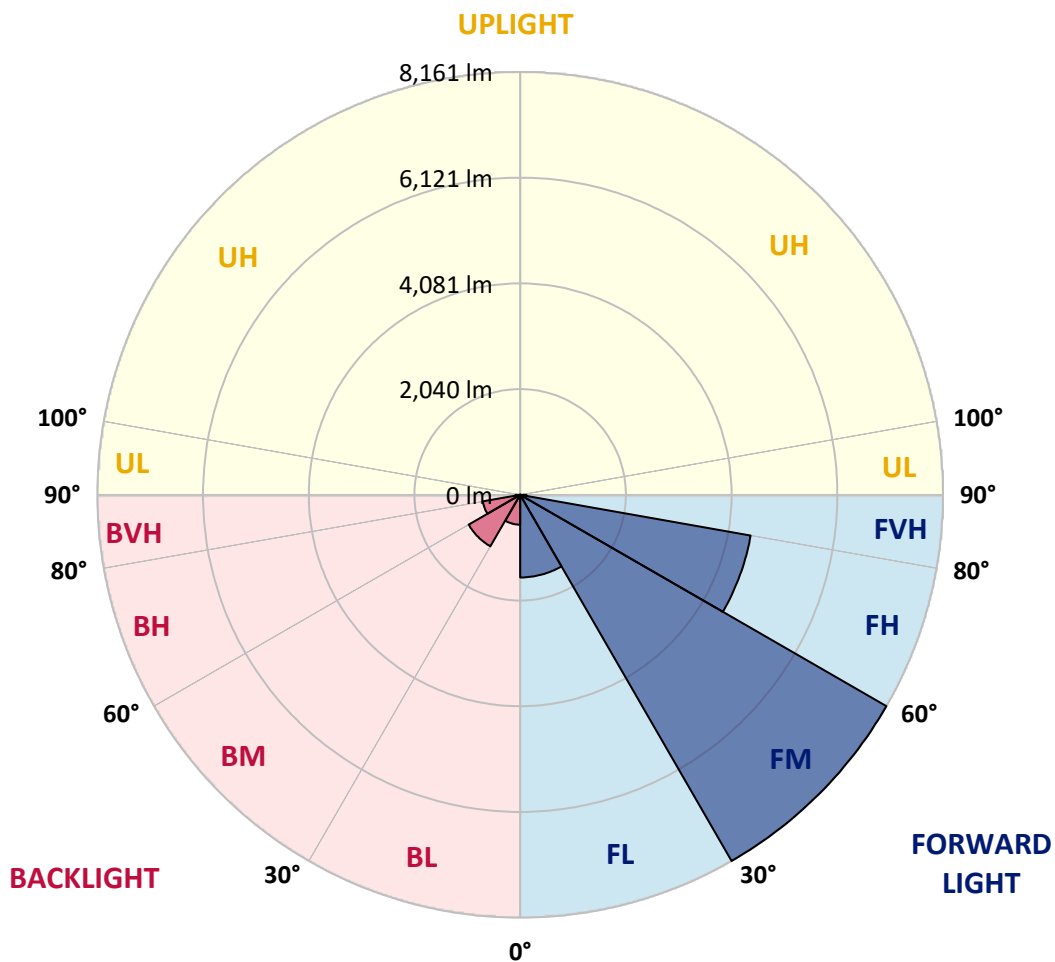
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1594.6	9.4			
FM (30°-60°)	8161.4	48.2			
FH (60°-80°)	4516.6	26.7			G2/5000
FVH (80°-90°)	122.7	0.7			G2/225
BL (0°-30°)	576.3	3.4	B2/1000		
BM (30°-60°)	1148.7	6.8	B2/2500		
BH (60°-80°)	731.7	4.3	B2/1000		G2/1000
BVH (80°-90°)	89.0	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: P197237

CATALOG NUMBER: NAV-AF-05-D-UNV-T2R-8030-600

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	57.5°	60°	62.5°	65°
0°	1467.8	1467.8	1467.8	1467.8	1467.8	1467.8	1467.8	1467.8	1467.8	1467.8	1467.8
2.5°	1848.3	1826.7	1828.9	1798.7	1754.5	1706.0	1666.1	1644.6	1626.3	1620.9	1590.7
5°	2417.3	2390.3	2380.7	2311.7	2208.2	2085.4	1963.6	1916.2	1877.4	1853.7	1795.5
7.5°	2882.9	2868.9	2855.9	2792.3	2690.0	2532.6	2336.5	2266.4	2201.8	2130.6	2060.6
10°	3199.7	3194.3	3188.9	3144.7	3059.6	2922.7	2711.5	2635.0	2554.2	2463.6	2372.0
12.5°	3439.0	3439.0	3443.3	3406.6	3354.9	3249.3	3057.4	2986.3	2904.4	2809.6	2705.0
15°	3599.5	3603.8	3626.5	3637.3	3610.3	3542.4	3374.3	3311.8	3234.2	3140.4	3037.0
17.5°	3706.2	3714.8	3748.3	3783.8	3818.3	3794.6	3669.6	3611.4	3541.3	3455.1	3358.1
20°	3954.1	3943.3	3944.4	3933.6	3984.3	4002.6	3933.6	3885.1	3829.1	3750.4	3662.0
22.5°	4474.6	4454.2	4401.3	4266.6	4205.2	4198.7	4157.8	4131.9	4088.8	4039.2	3950.9
25°	5153.6	5129.9	5025.3	4803.3	4620.1	4450.9	4375.5	4359.3	4331.3	4297.9	4234.3
27.5°	5855.2	5829.3	5694.6	5414.4	5175.1	4833.5	4598.6	4577.0	4551.1	4537.1	4507.0
30°	6472.7	6444.7	6312.1	6027.6	5738.8	5331.4	4899.2	4823.8	4779.6	4783.9	4766.7
32.5°	7014.8	6990.0	6841.3	6551.4	6258.2	5862.7	5289.4	5171.9	5072.8	5036.1	5049.0
35°	7469.6	7446.9	7284.2	6992.1	6696.9	6368.2	5791.6	5614.8	5453.2	5351.9	5340.0
37.5°	7736.8	7723.9	7609.7	7361.8	7068.7	6827.3	6354.1	6158.0	5919.8	5772.2	5707.5
40°	7721.8	7735.8	7716.4	7604.3	7376.9	7201.2	6940.4	6746.4	6513.6	6293.8	6162.3
42.5°	7501.9	7521.3	7608.6	7666.8	7605.4	7498.7	7452.3	7307.9	7098.8	6866.1	6683.9
45°	7200.1	7217.4	7330.5	7540.7	7716.4	7746.5	7900.7	7828.4	7651.7	7453.4	7253.0
47.5°	6737.8	6771.2	6902.7	7236.8	7654.9	7945.9	8276.8	8310.2	8207.8	8044.0	7856.5
50°	6068.6	6112.7	6297.0	6772.3	7422.2	8150.7	8836.1	8963.3	8922.3	8756.4	8566.7
52.5°	5383.1	5427.3	5673.0	6178.5	7047.1	8234.7	9386.8	9712.3	9947.2	10118.6	10152.0
55°	4669.7	4719.3	4988.7	5570.7	6547.1	8128.1	9780.2	10149.8	10388.0	10566.9	10639.1
57.5°	3864.6	3920.7	4181.5	4769.9	5840.1	7699.1	10217.7	10741.5	11096.0	11371.9	11527.1
60°	2941.1	3011.1	3281.6	3874.3	4911.1	6877.9	10412.8	11187.7	11751.3	12165.1	12410.8
62.5°	1864.4	1935.6	2216.8	2832.2	3853.9	5756.0	9861.0	10991.5	11952.8	12565.0	13015.4
65°	1017.4	1048.6	1204.9	1668.3	2598.3	4466.0	8462.1	9795.3	11180.1	12047.7	12739.5
67.5°	763.0	767.3	783.5	896.7	1383.8	3015.4	6616.0	7837.1	9375.0	10491.5	11318.1
70°	668.2	668.2	670.3	671.4	751.2	1633.8	4482.2	5606.2	7015.9	8145.3	9172.3
72.5°	599.2	592.7	590.6	577.6	588.4	837.4	2439.9	3449.7	4638.4	5905.8	6863.9
75°	517.3	516.2	516.2	503.3	509.8	589.5	1058.3	1655.4	2576.8	3756.9	4699.9
77.5°	447.2	439.7	440.8	433.2	453.7	451.6	502.2	682.2	1121.9	1973.3	2755.7
80°	368.6	363.2	366.4	362.1	394.4	334.1	338.4	417.1	557.2	865.4	1220.0
82.5°	272.7	274.8	295.3	293.1	331.9	225.2	247.9	311.5	375.0	431.1	468.8
85°	159.5	162.7	212.3	223.1	243.6	118.5	152.0	185.4	209.1	231.7	241.4
87.5°	17.2	22.6	118.5	121.8	108.8	35.6	61.4	77.6	83.0	88.4	77.6
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: P197237

CATALOG NUMBER: NAV-AF-05-D-UNV-T2R-8030-600

CANDELA DISTRIBUTION (continued):

	67.5°	70°	72.5°	75°	77.5°	80°	85°	90°	95°	100°	102.5°
0°	1467.8	1467.8	1467.8	1467.8	1467.8	1467.8	1467.8	1467.8	1467.8	1467.8	1467.8
2.5°	1581.0	1567.0	1551.9	1543.3	1528.2	1515.3	1491.5	1472.1	1450.6	1435.5	1429.0
5°	1766.4	1732.9	1697.4	1671.5	1639.2	1611.2	1557.3	1492.6	1472.1	1429.0	1418.3
7.5°	2007.8	1947.4	1887.1	1837.5	1781.4	1735.1	1644.6	1528.2	1513.1	1444.1	1429.0
10°	2291.2	2202.8	2113.4	2036.9	1955.0	1883.8	1750.2	1586.4	1570.2	1481.8	1466.8
12.5°	2608.0	2500.3	2385.0	2270.7	2173.7	2073.5	1891.4	1676.9	1651.0	1546.5	1526.0
15°	2934.6	2818.2	2684.6	2546.6	2427.0	2294.4	2064.9	1795.5	1748.0	1625.2	1597.2
17.5°	3256.8	3130.7	2990.6	2836.5	2696.4	2538.0	2252.4	1928.0	1846.1	1702.8	1667.2
20°	3568.3	3440.0	3292.4	3141.5	2966.9	2785.9	2444.2	2058.4	1933.4	1767.4	1721.1
22.5°	3851.7	3741.8	3594.1	3420.6	3243.9	3040.2	2639.3	2188.8	2009.9	1817.0	1757.7
25°	4150.2	4050.0	3903.4	3736.4	3530.6	3304.2	2840.8	2312.8	2071.3	1844.0	1770.7
27.5°	4452.0	4365.8	4227.8	4052.2	3831.2	3580.1	3045.6	2427.0	2120.9	1852.6	1764.2
30°	4774.2	4707.4	4580.2	4384.1	4161.0	3883.0	3268.7	2539.1	2152.2	1840.7	1735.1
32.5°	5079.2	5077.1	4963.9	4760.2	4519.9	4213.8	3503.6	2652.2	2168.3	1807.3	1684.5
35°	5396.1	5440.3	5355.1	5161.1	4907.9	4568.4	3763.3	2772.9	2169.4	1748.0	1618.7
37.5°	5756.0	5834.7	5797.0	5612.7	5346.5	4972.5	4068.3	2908.7	2163.0	1666.1	1522.8
40°	6165.5	6273.3	6272.2	6117.1	5832.5	5425.2	4422.9	3060.7	2147.9	1563.7	1409.6
42.5°	6634.4	6762.6	6798.2	6645.1	6357.4	5919.8	4829.2	3227.7	2124.2	1462.4	1290.0
45°	7171.0	7284.2	7351.0	7208.8	6919.9	6458.7	5295.8	3417.4	2095.1	1332.0	1153.1
47.5°	7745.5	7876.9	7977.2	7855.4	7547.2	7073.0	5848.7	3662.0	2084.3	1183.3	1005.5
50°	8457.8	8593.6	8810.2	8755.3	8586.1	8204.6	7018.0	4239.7	2088.6	1042.1	881.6
52.5°	10225.3	10536.7	10810.5	10688.7	10286.7	9632.5	7968.5	4560.8	1998.1	926.8	795.3
55°	10758.7	11112.2	11516.4	11465.7	11079.9	10420.3	8719.7	4829.2	1910.8	842.8	739.3
57.5°	11692.0	12109.1	12673.8	12663.0	12189.9	11447.4	9686.4	5150.4	1873.1	794.3	711.3
60°	12680.3	13211.6	13991.8	14113.6	13599.6	12826.8	10828.8	5544.8	1878.4	767.3	695.1
62.5°	13402.3	14181.5	15316.3	15680.6	15074.9	14223.5	12014.3	5939.2	1846.1	736.1	675.7
65°	13446.5	14568.4	16178.5	16745.4	16132.2	15038.3	12432.4	5861.6	1652.1	694.0	644.5
67.5°	12368.8	13830.2	15786.2	16408.1	15780.8	14536.1	11699.6	5124.5	1342.8	620.8	590.6
70°	10301.8	11998.1	14028.5	14721.4	14203.1	12943.2	10182.2	4093.1	1003.3	523.8	509.8
72.5°	7961.0	9543.1	11387.0	12028.3	11631.7	10523.8	8031.1	2983.1	716.7	424.6	413.8
75°	5691.4	7038.5	8377.0	8621.6	8230.4	7213.1	5210.7	1863.4	502.2	348.1	333.0
77.5°	3524.1	4400.3	4880.9	4566.2	4067.3	3380.8	2120.9	920.4	334.1	283.4	268.3
80°	1563.7	1835.3	1713.6	1527.1	1206.0	991.5	647.7	408.5	215.5	218.8	210.2
82.5°	525.9	556.1	541.0	537.8	485.0	424.6	274.8	176.7	120.7	140.1	136.9
85°	256.5	268.3	269.4	279.1	242.5	188.6	74.4	70.1	51.7	75.4	78.7
87.5°	77.6	78.7	71.1	77.6	62.5	43.1	14.0	19.4	9.7	18.3	18.3
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: P197237

CATALOG NUMBER: NAV-AF-05-D-UNV-T2R-8030-600

CANDELA DISTRIBUTION (continued):

	105°	107.5°	110°	112.5°	115°	117.5°	120°	122.5°	125°	127.5°	130°
0°	1467.8	1467.8	1467.8	1467.8	1467.8	1467.8	1467.8	1467.8	1467.8	1467.8	1467.8
2.5°	1417.2	1412.9	1405.3	1396.7	1394.6	1383.8	1380.5	1375.2	1371.9	1366.5	1362.2
5°	1404.2	1396.7	1388.1	1378.4	1378.4	1363.3	1356.8	1350.4	1350.4	1340.7	1336.4
7.5°	1417.2	1407.5	1397.8	1389.2	1392.4	1375.2	1368.7	1362.2	1361.1	1351.4	1347.1
10°	1453.8	1444.1	1432.3	1423.6	1420.4	1406.4	1398.9	1389.2	1382.7	1376.2	1369.8
12.5°	1509.9	1496.9	1481.8	1463.5	1456.0	1444.1	1432.3	1419.3	1404.2	1397.8	1388.1
15°	1576.7	1555.1	1534.7	1512.0	1491.5	1479.7	1463.5	1443.0	1422.6	1413.9	1401.0
17.5°	1631.6	1609.0	1579.9	1553.0	1516.3	1506.6	1484.0	1459.2	1425.8	1422.6	1403.2
20°	1678.0	1643.5	1607.9	1575.6	1519.6	1514.2	1486.2	1457.1	1409.6	1409.6	1385.9
22.5°	1703.9	1656.4	1614.4	1571.3	1501.2	1496.9	1464.6	1430.1	1371.9	1374.1	1345.0
25°	1708.2	1651.0	1598.2	1546.5	1465.7	1458.1	1417.2	1379.5	1315.9	1311.6	1281.4
27.5°	1690.9	1624.1	1562.7	1500.2	1412.9	1396.7	1351.4	1306.2	1243.7	1232.9	1200.6
30°	1651.0	1572.4	1503.4	1431.2	1339.6	1313.7	1266.3	1220.0	1156.4	1142.4	1112.2
32.5°	1587.5	1498.0	1421.5	1349.3	1248.0	1215.7	1168.2	1121.9	1060.5	1049.7	1021.7
35°	1503.4	1403.2	1322.3	1245.8	1144.5	1111.1	1065.9	1024.9	968.9	964.5	945.1
37.5°	1397.8	1293.2	1207.0	1133.7	1037.8	1020.6	974.2	944.1	897.7	902.0	892.3
40°	1278.2	1171.5	1089.6	1024.9	941.9	926.8	898.8	876.2	836.3	848.2	849.2
42.5°	1157.5	1050.8	976.4	918.2	847.1	837.4	818.0	805.0	774.9	798.6	808.3
45°	1020.6	921.4	857.9	813.7	760.9	760.9	751.2	750.1	729.6	763.0	772.7
47.5°	888.0	810.4	766.2	739.3	702.7	719.9	716.7	725.3	710.2	744.7	753.3
50°	787.8	733.9	707.0	694.0	668.2	695.1	701.6	713.4	700.5	730.7	737.2
52.5°	724.2	688.7	673.6	670.3	652.0	685.4	696.2	707.0	691.9	719.9	718.8
55°	688.7	664.9	659.6	666.0	652.0	684.3	695.1	702.7	689.7	709.1	708.1
57.5°	675.7	662.8	666.0	675.7	666.0	693.0	698.4	707.0	694.0	702.7	707.0
60°	674.6	674.6	687.6	700.5	694.0	713.4	716.7	715.6	703.7	704.8	707.0
62.5°	668.2	684.3	705.9	726.4	724.2	747.9	750.1	736.1	726.4	715.6	712.4
65°	647.7	674.6	705.9	733.9	738.2	774.9	779.2	765.2	758.7	740.4	726.4
67.5°	602.4	636.9	673.6	708.1	715.6	765.2	774.9	780.3	783.5	771.6	753.3
70°	525.9	561.5	599.2	639.1	649.9	704.8	725.3	750.1	769.5	786.7	780.3
72.5°	427.8	460.2	492.5	529.2	545.3	602.4	629.4	672.5	702.7	746.8	765.2
75°	339.5	358.9	378.3	400.9	413.8	469.9	503.3	555.0	596.0	657.4	698.4
77.5°	267.3	277.0	286.7	296.4	301.8	333.0	360.0	411.7	459.1	536.7	597.0
80°	205.8	211.2	212.3	215.5	213.4	228.5	238.2	269.4	310.4	386.9	458.0
82.5°	132.6	136.9	139.0	144.4	133.6	153.0	159.5	162.7	184.3	240.3	291.0
85°	74.4	75.4	76.5	78.7	63.6	83.0	84.1	78.7	76.5	99.1	112.1
87.5°	18.3	17.2	18.3	18.3	7.5	17.2	17.2	11.9	8.6	16.2	12.9
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: P197237

CATALOG NUMBER: NAV-AF-05-D-UNV-T2R-8030-600

CANDELA DISTRIBUTION (continued):

	135°	145°	155°	165°	175°	180°
0°	1467.8	1467.8	1467.8	1467.8	1467.8	1467.8
2.5°	1352.5	1350.4	1351.4	1346.1	1343.9	1345.0
5°	1331.0	1326.7	1326.7	1323.4	1319.1	1319.1
7.5°	1340.7	1332.0	1328.8	1322.3	1315.9	1317.0
10°	1355.8	1340.7	1329.9	1320.2	1312.6	1312.6
12.5°	1365.5	1338.5	1322.3	1309.4	1300.8	1300.8
15°	1367.6	1326.7	1302.9	1288.9	1280.3	1280.3
17.5°	1354.7	1302.9	1272.8	1254.4	1244.7	1246.9
20°	1322.3	1258.8	1223.2	1203.8	1194.1	1195.2
22.5°	1271.7	1198.4	1157.5	1134.8	1125.1	1125.1
25°	1202.7	1123.0	1078.8	1060.5	1051.8	1051.8
27.5°	1124.0	1042.1	1003.3	989.3	983.9	983.9
30°	1035.7	967.8	939.8	930.1	921.4	921.4
32.5°	961.3	912.8	903.1	890.2	867.6	866.5
35°	902.0	896.7	889.1	850.3	818.0	813.7
37.5°	869.7	902.0	854.6	787.8	761.9	760.9
40°	852.5	882.6	800.7	768.4	765.2	765.2
42.5°	811.5	833.1	797.5	779.2	779.2	780.3
45°	768.4	786.7	805.0	788.9	794.3	795.3
47.5°	738.2	774.9	805.0	791.0	801.8	808.3
50°	710.2	764.1	788.9	788.9	800.7	801.8
52.5°	703.7	749.0	773.8	785.6	786.7	781.3
55°	704.8	737.2	761.9	777.0	770.6	770.6
57.5°	703.7	730.7	752.2	757.6	760.9	760.9
60°	704.8	722.1	739.3	737.2	747.9	747.9
62.5°	708.1	710.2	718.8	716.7	732.8	732.8
65°	715.6	695.1	689.7	691.9	711.3	710.2
67.5°	729.6	674.6	657.4	658.5	686.5	682.2
70°	750.1	646.6	620.8	614.3	661.7	654.2
72.5°	756.5	614.3	573.3	566.9	594.9	573.3
75°	726.4	588.4	522.7	501.1	489.3	482.8
77.5°	647.7	572.3	469.9	424.6	406.3	402.0
80°	536.7	538.9	400.9	347.0	403.1	402.0
82.5°	405.2	465.6	321.2	300.7	292.1	243.6
85°	196.1	350.3	246.8	206.9	123.9	117.5
87.5°	17.2	146.6	142.3	92.7	42.0	39.9
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)