

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: P270621

Luminaire Tested: **NAV-AF-05-D-UNV-T2R-7027**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P270621
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-7027
Description: NAVION ROADWAY AND AREA LUMINAIRE
(5) 70 CRI, 2700K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II
ROADWAY OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 27376.5 lumens
Efficiency: N/A
Efficacy: 98.1 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

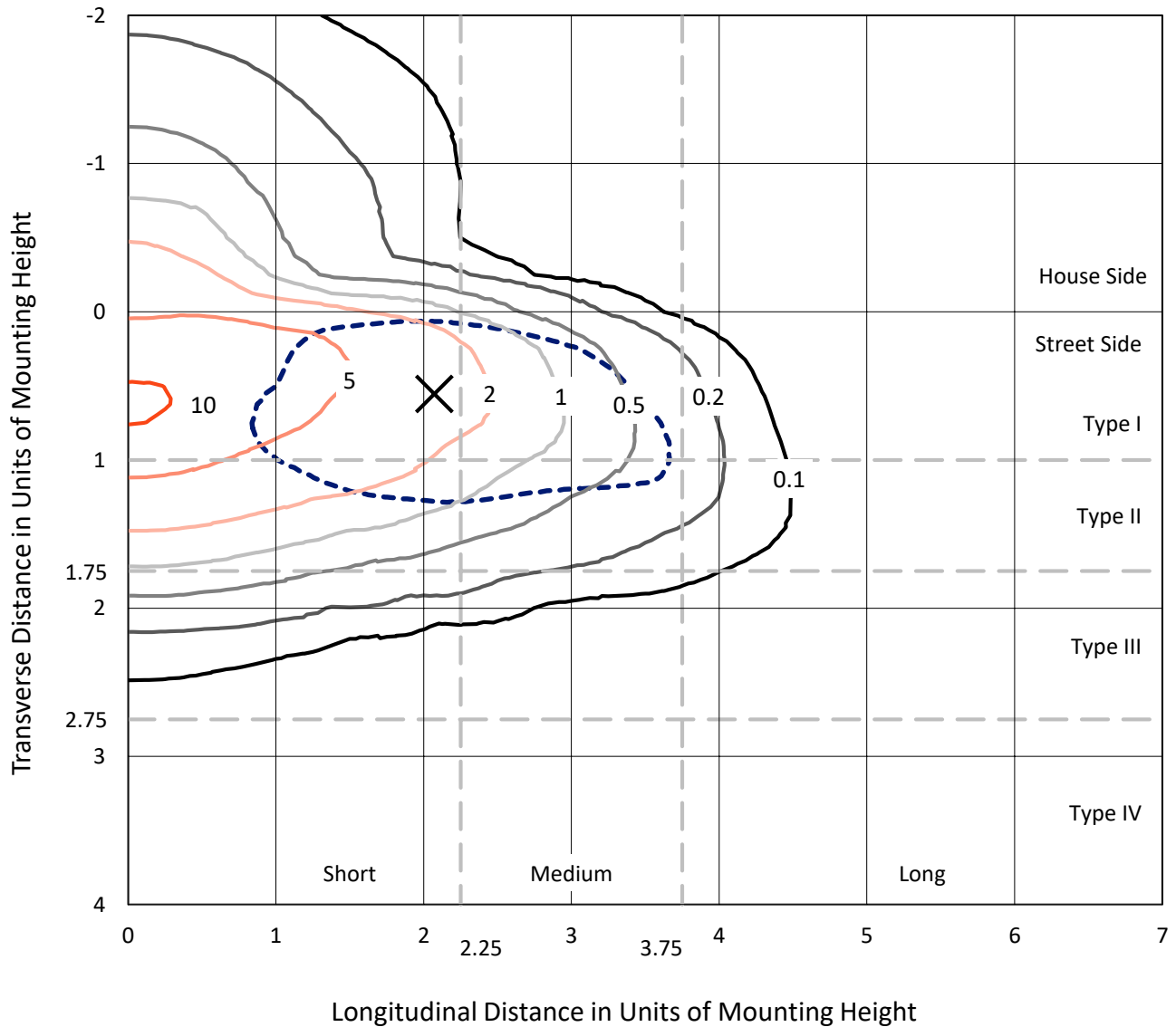
Input Watts (W): 279
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



REPORT NUMBER: P270621
 CATALOG NUMBER: NAV-AF-05-D-UNV-T2R-7027

Iso-Footcandle Lines of Horizontal Illumination

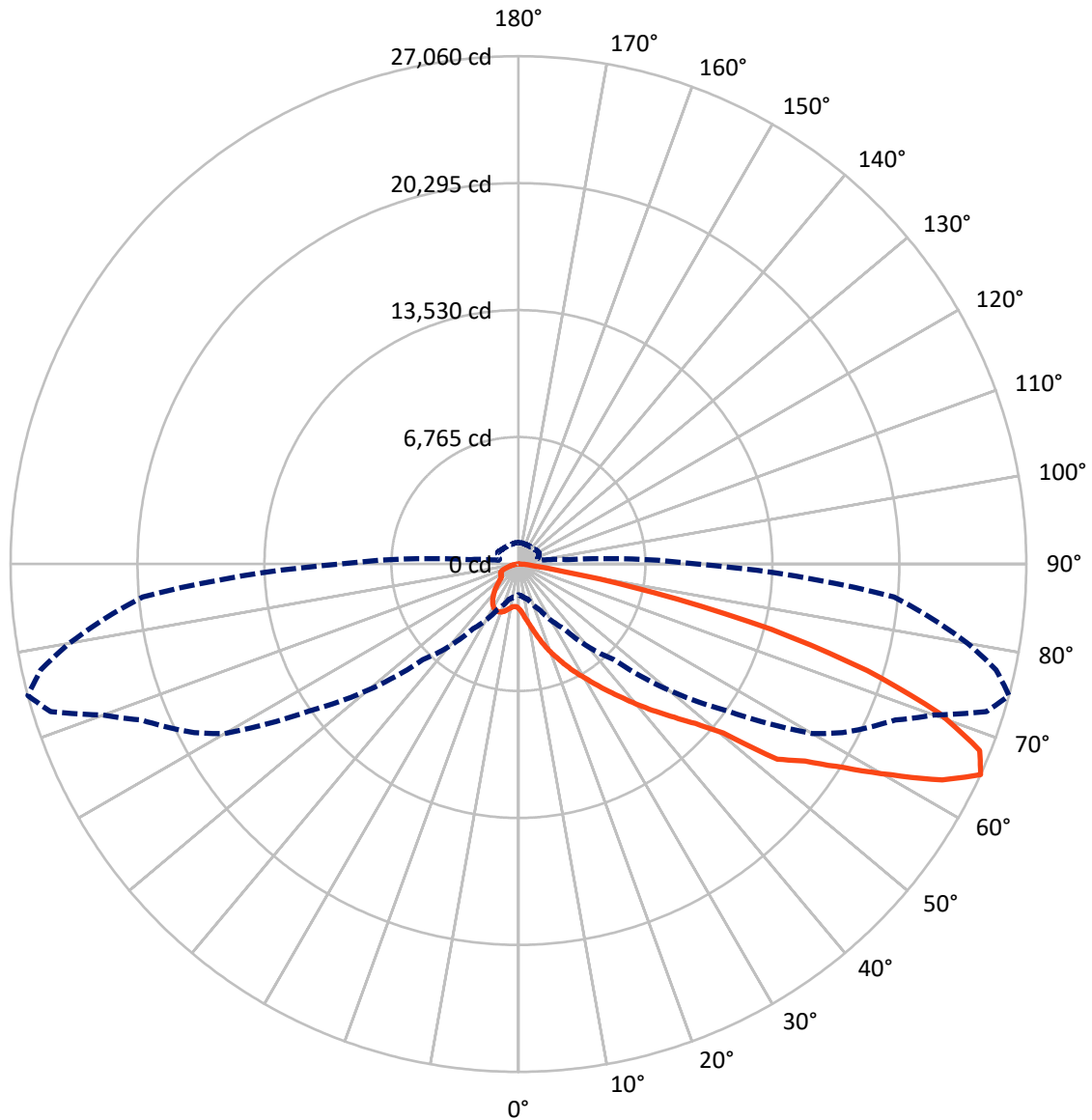
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 10.9 fc
 Type II - Short - Semi-Cutoff

REPORT NUMBER: P270621
CATALOG NUMBER: NAV-AF-05-D-UNV-T2R-7027

Luminous Intensity Polar Plot



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

REPORT NUMBER: P270621

CATALOG NUMBER: NAV-AF-05-D-UNV-T2R-7027

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	4113.7	0.0	4113.7
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	23262.8	0.0	23262.8
	% Fixture	85.0	0.0	85.0
Total	Lumens	27376.5	0.0	27376.5
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	280.0	1.0
10°-20°	1069.6	3.9
20°-30°	2158.5	7.9
30°-40°	3665.8	13.4
40°-50°	5112.9	18.7
50°-60°	6266.5	22.9
60°-70°	5895.9	21.5
70°-80°	2585.3	9.4
80°-90°	342.1	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°	27376.5	100.0
0°-180°	27376.5	100.0

Coefficient of Utilization



REPORT NUMBER: P270621

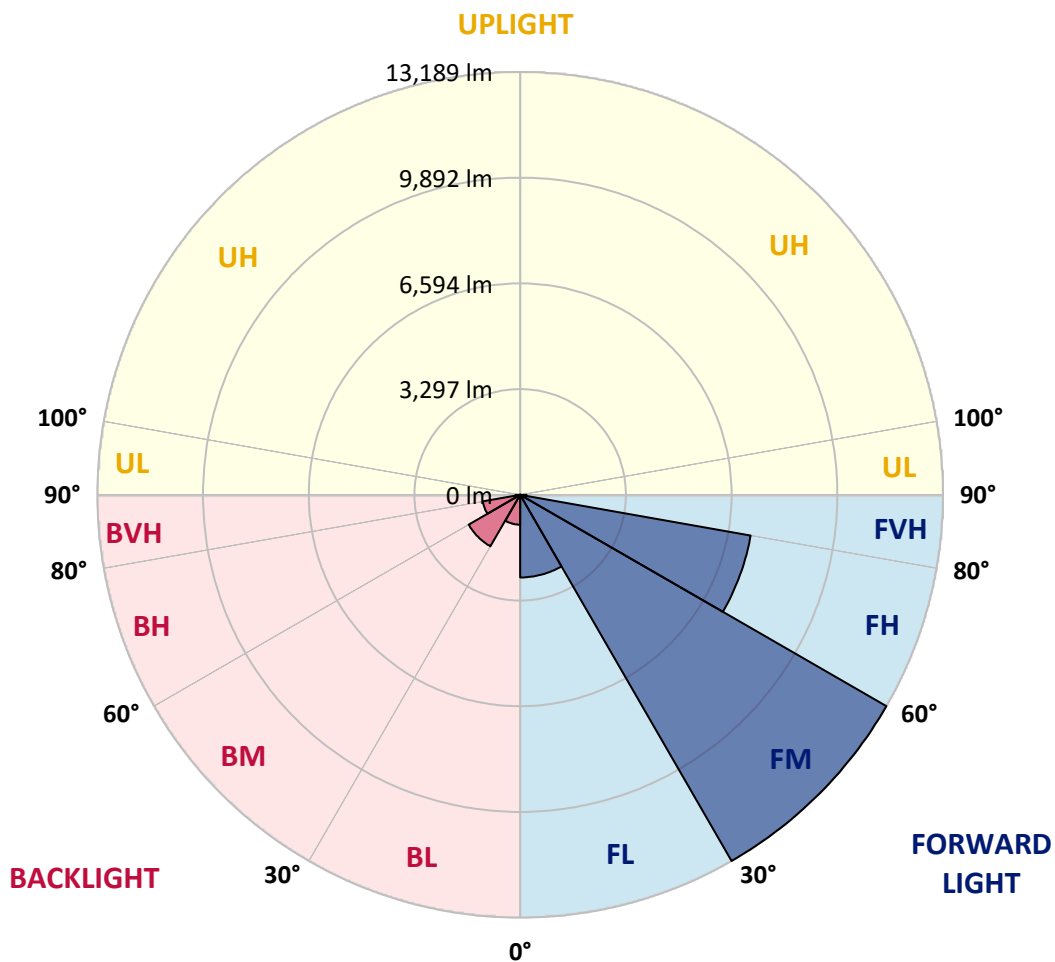
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	2576.9	9.4			
FM (30°-60°)	13188.7	48.2			
FH (60°-80°)	7298.8	26.7			G3/7500
FVH (80°-90°)	198.3	0.7			G2/225
BL (0°-30°)	931.3	3.4	B2/1000		
BM (30°-60°)	1856.3	6.8	B2/2500		
BH (60°-80°)	1182.3	4.3	B3/2500		G3/2500
BVH (80°-90°)	143.8	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: P270621

CATALOG NUMBER: NAV-AF-05-D-UNV-T2R-7027

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	57.5°	60°	62.5°	65°
0°	2372.1	2372.1	2372.1	2372.1	2372.1	2372.1	2372.1	2372.1	2372.1	2372.1	2372.1
2.5°	2986.8	2951.9	2955.5	2906.6	2835.3	2756.9	2692.5	2657.6	2628.0	2619.3	2570.5
5°	3906.3	3862.8	3847.1	3735.6	3568.4	3369.9	3173.2	3096.5	3033.8	2995.5	2901.4
7.5°	4658.7	4636.1	4615.1	4512.4	4346.9	4092.7	3775.7	3662.5	3557.9	3443.1	3329.8
10°	5170.6	5162.0	5153.2	5081.9	4944.4	4723.1	4381.8	4258.1	4127.5	3981.2	3833.2
12.5°	5557.4	5557.4	5564.3	5505.1	5421.5	5250.9	4940.8	4825.9	4693.6	4540.3	4371.3
15°	5816.9	5823.8	5860.4	5877.8	5834.2	5724.4	5452.8	5351.8	5226.3	5075.0	4907.7
17.5°	5989.2	6003.2	6057.1	6114.7	6170.4	6132.0	5930.0	5836.0	5722.7	5583.4	5426.8
20°	6389.7	6372.3	6374.2	6356.6	6438.5	6468.2	6356.6	6278.3	6187.7	6060.7	5917.9
22.5°	7230.9	7197.8	7112.5	6894.9	6795.6	6785.1	6719.0	6677.1	6607.5	6527.4	6384.6
25°	8328.1	8289.7	8120.9	7762.2	7466.1	7192.5	7070.6	7044.6	6999.4	6945.3	6842.6
27.5°	9461.8	9420.0	9202.3	8749.6	8363.0	7810.9	7431.1	7396.5	7354.7	7332.0	7283.2
30°	10459.9	10414.5	10200.3	9740.5	9273.8	8615.5	7917.1	7795.2	7723.7	7730.8	7703.0
32.5°	11335.8	11295.7	11055.4	10587.0	10113.2	9474.1	8547.6	8357.7	8197.6	8138.4	8159.2
35°	12070.7	12034.1	11771.2	11299.2	10822.1	10290.9	9359.1	9073.5	8812.4	8648.6	8629.4
37.5°	12502.6	12481.8	12297.2	11896.7	11422.8	11032.8	10268.3	9951.2	9566.4	9327.8	9223.3
40°	12478.3	12501.0	12469.6	12288.5	11921.0	11637.2	11215.7	10902.2	10526.0	10170.7	9958.3
42.5°	12122.9	12154.3	12295.5	12389.5	12290.3	12117.7	12042.9	11809.5	11471.6	11095.4	10801.1
45°	11635.3	11663.2	11846.0	12185.7	12469.6	12518.3	12767.4	12650.7	12365.1	12044.7	11720.6
47.5°	10888.3	10942.3	11154.7	11694.6	12370.3	12840.6	13375.1	13429.1	13263.7	12999.1	12695.9
50°	9806.6	9878.1	10175.9	10944.0	11994.1	13171.4	14279.1	14484.5	14418.3	14150.1	13843.7
52.5°	8699.0	8770.5	9167.6	9984.3	11388.1	13307.2	15169.0	15694.9	16074.6	16351.5	16405.4
55°	7546.2	7626.3	8061.7	9002.2	10580.0	13134.8	15804.6	16402.1	16786.8	17076.1	17192.8
57.5°	6245.2	6335.7	6757.2	7708.1	9437.6	12441.6	16511.7	17358.0	17931.1	18376.9	18627.8
60°	4752.8	4865.8	5303.1	6260.8	7936.3	11114.5	16827.0	18079.1	18990.0	19658.7	20055.7
62.5°	3012.8	3127.9	3582.4	4576.9	6227.8	9301.7	15935.3	17762.1	19315.6	20304.7	21032.8
65°	1644.1	1694.6	1947.0	2696.0	4198.9	7217.1	13674.7	15829.0	18066.9	19468.8	20586.9
67.5°	1233.1	1240.0	1266.2	1449.0	2236.2	4872.9	10691.4	12664.7	15149.8	16954.2	18289.9
70°	1079.8	1079.8	1083.3	1085.1	1213.9	2640.2	7243.2	9059.5	11337.6	13162.8	14822.5
72.5°	968.4	957.9	954.4	933.5	950.9	1353.1	3942.9	5574.7	7495.6	9543.8	11092.0
75°	836.0	834.2	834.2	813.3	823.7	952.7	1710.3	2675.1	4164.1	6071.0	7594.9
77.5°	722.7	710.6	712.3	700.0	733.1	729.8	811.6	1102.4	1813.0	3188.9	4453.2
80°	595.7	587.0	592.2	585.2	637.3	539.9	546.9	674.0	900.5	1398.5	1971.4
82.5°	440.6	444.1	477.2	473.6	536.4	364.1	400.6	503.3	606.0	696.6	757.6
85°	257.8	262.9	343.2	360.5	393.5	191.6	245.5	299.6	337.9	374.5	390.1
87.5°	27.8	36.7	191.6	196.8	175.9	57.5	99.3	125.5	134.0	142.8	125.5
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: P270621

CATALOG NUMBER: NAV-AF-05-D-UNV-T2R-7027

CANDELA DISTRIBUTION (continued):

	67.5°	70°	72.5°	75°	77.5°	80°	85°	90°	95°	100°	102.5°
0°	2372.1	2372.1	2372.1	2372.1	2372.1	2372.1	2372.1	2372.1	2372.1	2372.1	2372.1
2.5°	2554.9	2532.2	2507.9	2494.0	2469.5	2448.6	2410.3	2379.0	2344.1	2319.8	2309.4
5°	2854.5	2800.5	2743.0	2701.2	2648.9	2603.6	2516.5	2412.0	2379.0	2309.4	2291.8
7.5°	3244.5	3147.0	3049.4	2969.3	2878.8	2803.9	2657.6	2469.5	2445.1	2333.6	2309.4
10°	3702.5	3559.8	3415.1	3291.6	3159.2	3044.3	2828.4	2563.6	2537.4	2394.6	2370.3
12.5°	4214.6	4040.4	3854.1	3669.4	3512.7	3350.8	3056.5	2709.8	2668.1	2499.2	2466.0
15°	4742.2	4554.1	4338.3	4115.3	3922.0	3707.8	3336.8	2901.4	2824.8	2626.3	2581.0
17.5°	5263.0	5059.3	4832.8	4583.8	4357.4	4101.4	3639.8	3115.6	2983.4	2751.7	2694.1
20°	5766.3	5559.0	5320.4	5076.6	4794.6	4501.9	3949.8	3326.3	3124.3	2856.2	2781.2
22.5°	6224.4	6046.8	5808.1	5527.7	5242.1	4912.9	4265.2	3537.0	3248.0	2936.3	2840.5
25°	6706.7	6544.8	6307.9	6038.0	5705.3	5339.6	4590.8	3737.4	3347.3	2979.8	2861.5
27.5°	7194.3	7055.1	6832.1	6548.3	6191.3	5785.4	4921.6	3922.0	3427.5	2993.7	2851.0
30°	7715.2	7607.1	7401.7	7084.7	6724.2	6274.8	5282.2	4103.1	3477.9	2974.6	2803.9
32.5°	8208.0	8204.5	8021.7	7692.5	7304.1	6809.5	5661.7	4286.0	3504.0	2920.6	2722.0
35°	8719.9	8791.4	8653.8	8340.4	7931.0	7382.5	6081.5	4481.0	3505.7	2824.8	2615.9
37.5°	9301.7	9428.8	9367.9	9070.0	8639.9	8035.6	6574.3	4700.6	3495.3	2692.5	2460.8
40°	9963.5	10137.6	10135.8	9885.0	9425.3	8767.0	7147.4	4946.0	3471.0	2527.0	2277.9
42.5°	10721.0	10928.3	10985.7	10738.5	10273.5	9566.4	7803.9	5216.0	3432.7	2363.4	2084.6
45°	11588.3	11771.2	11879.1	11649.3	11182.6	10437.1	8558.1	5522.5	3385.6	2152.6	1863.4
47.5°	12516.5	12729.1	12890.9	12694.2	12196.2	11429.9	9451.4	5917.9	3368.1	1912.2	1624.9
50°	13667.7	13887.2	14237.2	14148.5	13875.0	13258.4	11341.0	6851.4	3375.1	1684.1	1424.6
52.5°	16524.0	17027.3	17469.6	17272.8	16623.1	15566.1	12877.1	7370.2	3228.9	1497.7	1285.3
55°	17385.9	17957.2	18610.2	18528.4	17904.9	16839.2	14091.0	7803.9	3087.7	1361.9	1194.7
57.5°	18894.2	19568.1	20480.7	20463.3	19698.8	18498.8	15653.1	8322.8	3026.7	1283.5	1149.4
60°	20491.1	21349.7	22610.7	22807.4	21976.8	20728.0	17499.3	8960.4	3035.6	1240.0	1123.3
62.5°	21658.0	22917.2	24751.0	25339.7	24361.0	22985.1	19414.9	9597.8	2983.4	1189.4	1092.0
65°	21729.5	23542.4	26144.4	27060.4	26069.4	24301.7	20090.7	9472.4	2669.9	1121.5	1041.5
67.5°	19987.8	22349.4	25510.3	26515.2	25501.7	23490.1	18906.4	8281.1	2169.9	1003.1	954.4
70°	16647.6	19388.7	22669.8	23789.8	22952.1	20916.1	16454.3	6614.4	1621.4	846.5	823.7
72.5°	12864.8	15421.6	18401.3	19437.5	18796.7	17006.4	12978.2	4820.7	1158.2	686.1	668.8
75°	9197.1	11374.1	13537.2	13932.4	13300.2	11656.2	8420.4	3011.2	811.6	562.5	538.2
77.5°	5694.9	7110.9	7887.5	7378.9	6572.7	5463.3	3427.5	1487.4	539.9	458.0	433.6
80°	2527.0	2965.8	2769.0	2467.9	1948.9	1602.2	1046.6	660.1	348.4	353.6	339.6
82.5°	849.8	898.7	874.3	869.0	783.7	686.1	444.1	285.7	195.0	226.5	221.3
85°	414.5	433.6	435.4	451.0	391.8	304.7	120.2	113.1	83.6	121.9	127.1
87.5°	125.5	127.1	115.0	125.5	101.0	69.7	22.6	31.4	15.7	29.6	29.6
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: P270621

CATALOG NUMBER: NAV-AF-05-D-UNV-T2R-7027

CANDELA DISTRIBUTION (continued):

	105°	107.5°	110°	112.5°	115°	117.5°	120°	122.5°	125°	127.5°	130°
0°	2372.1	2372.1	2372.1	2372.1	2372.1	2372.1	2372.1	2372.1	2372.1	2372.1	2372.1
2.5°	2290.1	2283.2	2270.9	2257.0	2253.6	2236.2	2230.9	2222.2	2216.9	2208.4	2201.3
5°	2269.3	2257.0	2243.2	2227.4	2227.4	2203.1	2192.7	2182.2	2182.2	2166.5	2159.5
7.5°	2290.1	2274.5	2258.8	2244.9	2250.1	2222.2	2211.7	2201.3	2199.6	2183.9	2177.0
10°	2349.3	2333.6	2314.6	2300.6	2295.3	2272.7	2260.6	2244.9	2234.4	2223.9	2213.6
12.5°	2439.9	2419.0	2394.6	2365.1	2352.8	2333.6	2314.6	2293.6	2269.3	2258.8	2243.2
15°	2548.0	2513.1	2480.0	2443.4	2410.3	2391.2	2365.1	2331.9	2298.9	2284.8	2264.0
17.5°	2636.7	2600.1	2553.2	2509.5	2450.3	2434.6	2398.1	2358.1	2304.2	2298.9	2267.5
20°	2711.7	2655.8	2598.3	2546.2	2455.5	2447.0	2401.6	2354.5	2277.9	2277.9	2239.7
22.5°	2753.5	2676.8	2608.9	2539.1	2426.1	2419.0	2366.8	2311.1	2216.9	2220.5	2173.4
25°	2760.4	2668.1	2582.7	2499.2	2368.6	2356.3	2290.1	2229.2	2126.5	2119.6	2070.8
27.5°	2732.6	2624.5	2525.2	2424.3	2283.2	2257.0	2183.9	2110.7	2009.8	1992.4	1940.1
30°	2668.1	2540.9	2429.5	2312.7	2164.7	2123.0	2046.2	1971.4	1868.7	1846.0	1797.2
32.5°	2565.3	2420.8	2297.1	2180.5	2016.8	1964.5	1887.9	1813.0	1713.6	1696.3	1650.9
35°	2429.5	2267.5	2136.9	2013.2	1849.5	1795.5	1722.4	1656.2	1565.7	1558.6	1527.4
37.5°	2258.8	2089.8	1950.5	1832.2	1677.1	1649.3	1574.4	1525.6	1450.8	1457.7	1442.0
40°	2065.6	1893.1	1760.7	1656.2	1522.1	1497.7	1452.5	1415.9	1351.4	1370.6	1372.3
42.5°	1870.5	1698.1	1577.9	1483.8	1368.8	1353.1	1321.9	1300.9	1252.1	1290.4	1306.1
45°	1649.3	1489.0	1386.3	1314.8	1229.5	1229.5	1213.9	1212.2	1179.0	1233.1	1248.7
47.5°	1435.0	1309.6	1238.3	1194.7	1135.5	1163.3	1158.2	1172.1	1147.7	1203.4	1217.4
50°	1273.1	1186.0	1142.5	1121.5	1079.8	1123.3	1133.8	1153.0	1132.0	1180.8	1191.2
52.5°	1170.3	1112.9	1088.4	1083.3	1053.6	1107.6	1125.0	1142.5	1118.1	1163.3	1161.6
55°	1112.9	1074.6	1065.7	1076.3	1053.6	1106.0	1123.3	1135.5	1114.5	1146.0	1144.3
57.5°	1092.0	1071.0	1076.3	1092.0	1076.3	1119.8	1128.5	1142.5	1121.5	1135.5	1142.5
60°	1090.3	1090.3	1111.2	1132.0	1121.5	1153.0	1158.2	1156.4	1137.3	1139.1	1142.5
62.5°	1079.8	1106.0	1140.7	1173.8	1170.3	1208.6	1212.2	1189.4	1173.8	1156.4	1151.2
65°	1046.6	1090.3	1140.7	1186.0	1192.9	1252.1	1259.2	1236.4	1226.0	1196.5	1173.8
67.5°	973.6	1029.3	1088.4	1144.3	1156.4	1236.4	1252.1	1261.0	1266.2	1246.9	1217.4
70°	849.8	907.4	968.4	1032.7	1050.2	1139.1	1172.1	1212.2	1243.4	1271.3	1261.0
72.5°	691.3	743.6	795.9	855.0	881.2	973.6	1017.2	1086.7	1135.5	1207.0	1236.4
75°	548.5	579.9	611.2	647.9	668.8	759.2	813.3	896.9	963.2	1062.3	1128.5
77.5°	431.9	447.5	463.3	478.9	487.6	538.2	581.7	665.3	741.9	867.4	964.8
80°	332.6	341.4	343.2	348.4	344.8	369.3	384.8	435.4	501.6	625.2	740.2
82.5°	214.2	221.3	224.7	233.4	216.0	247.4	257.8	262.9	297.8	388.3	470.3
85°	120.2	121.9	123.6	127.1	102.8	134.0	135.9	127.1	123.6	160.2	181.1
87.5°	29.6	27.8	29.6	29.6	12.1	27.8	27.8	19.1	14.0	26.1	20.9
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: P270621

CATALOG NUMBER: NAV-AF-05-D-UNV-T2R-7027

CANDELA DISTRIBUTION (continued):

	135°	145°	155°	165°	175°	180°
0°	2372.1	2372.1	2372.1	2372.1	2372.1	2372.1
2.5°	2185.7	2182.2	2183.9	2175.2	2171.7	2173.4
5°	2150.8	2143.8	2143.8	2138.7	2131.7	2131.7
7.5°	2166.5	2152.6	2147.4	2136.9	2126.5	2128.2
10°	2190.8	2166.5	2149.0	2133.5	2121.2	2121.2
12.5°	2206.5	2162.9	2136.9	2116.0	2102.0	2102.0
15°	2210.0	2143.8	2105.5	2082.9	2068.9	2068.9
17.5°	2189.1	2105.5	2056.8	2027.1	2011.6	2015.0
20°	2136.9	2034.1	1976.7	1945.3	1929.6	1931.4
22.5°	2055.1	1936.7	1870.5	1833.9	1818.2	1818.2
25°	1943.7	1814.7	1743.3	1713.6	1699.8	1699.8
27.5°	1816.5	1684.1	1621.4	1598.8	1590.0	1590.0
30°	1673.6	1563.9	1518.7	1503.0	1489.0	1489.0
32.5°	1553.4	1475.0	1459.4	1438.5	1402.0	1400.2
35°	1457.7	1449.0	1436.7	1374.0	1321.9	1314.8
37.5°	1405.5	1457.7	1381.1	1273.1	1231.2	1229.5
40°	1377.6	1426.2	1294.0	1241.7	1236.4	1236.4
42.5°	1311.3	1346.2	1288.8	1259.2	1259.2	1261.0
45°	1241.7	1271.3	1300.9	1274.9	1283.5	1285.3
47.5°	1192.9	1252.1	1300.9	1278.3	1295.7	1306.1
50°	1147.7	1234.8	1274.9	1274.9	1294.0	1295.7
52.5°	1137.3	1210.3	1250.4	1269.7	1271.3	1262.7
55°	1139.1	1191.2	1231.2	1255.7	1245.2	1245.2
57.5°	1137.3	1180.8	1215.5	1224.3	1229.5	1229.5
60°	1139.1	1166.9	1194.7	1191.2	1208.6	1208.6
62.5°	1144.3	1147.7	1161.6	1158.2	1184.2	1184.2
65°	1156.4	1123.3	1114.5	1118.1	1149.4	1147.7
67.5°	1179.0	1090.3	1062.3	1064.1	1109.3	1102.4
70°	1212.2	1045.0	1003.1	992.6	1069.3	1057.1
72.5°	1222.6	992.6	926.5	916.0	961.4	926.5
75°	1173.8	950.9	844.6	809.8	790.7	780.2
77.5°	1046.6	924.7	759.2	686.1	656.7	649.7
80°	867.4	870.7	647.9	560.8	651.4	649.7
82.5°	654.9	752.3	519.0	486.0	472.0	393.5
85°	316.9	566.0	398.8	334.3	200.3	189.8
87.5°	27.8	236.9	229.8	149.7	67.9	64.5
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)