

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: P270382

Luminaire Tested: **NAV-AF-02-D-UNV-T2R-7027-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P270382
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-7027-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 2700K, 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: 7307.1 lumens
Efficiency: N/A
Efficacy: 110.7 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type II - Short - Semi-Cutoff
BUG Rating: B1 - U0 - G2

Input Watts (W): 66
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

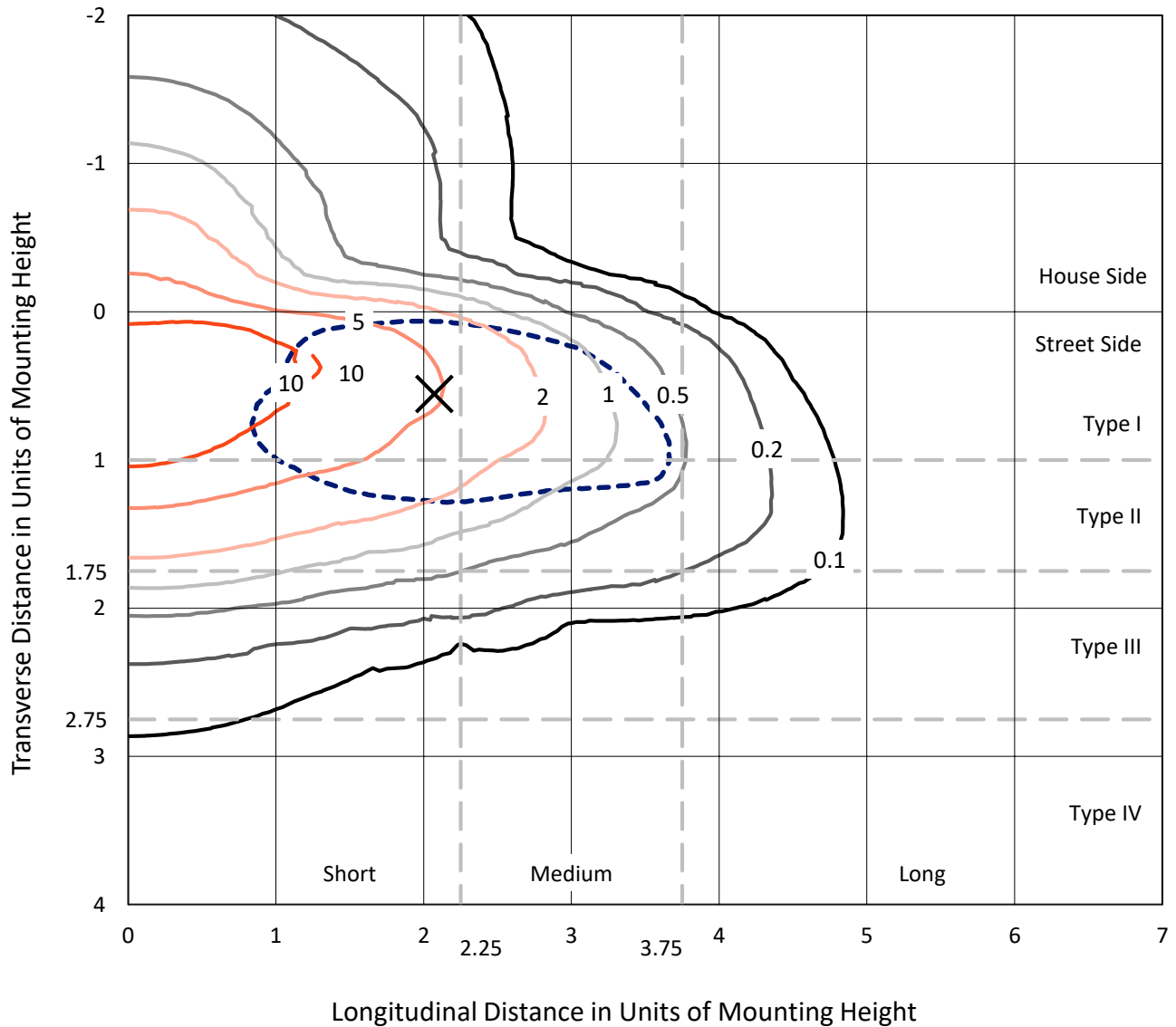


REPORT NUMBER: P270382

CATALOG NUMBER: NAV-AF-02-D-UNV-T2R-7027-600

Iso-Footcandle Lines of Horizontal Illumination

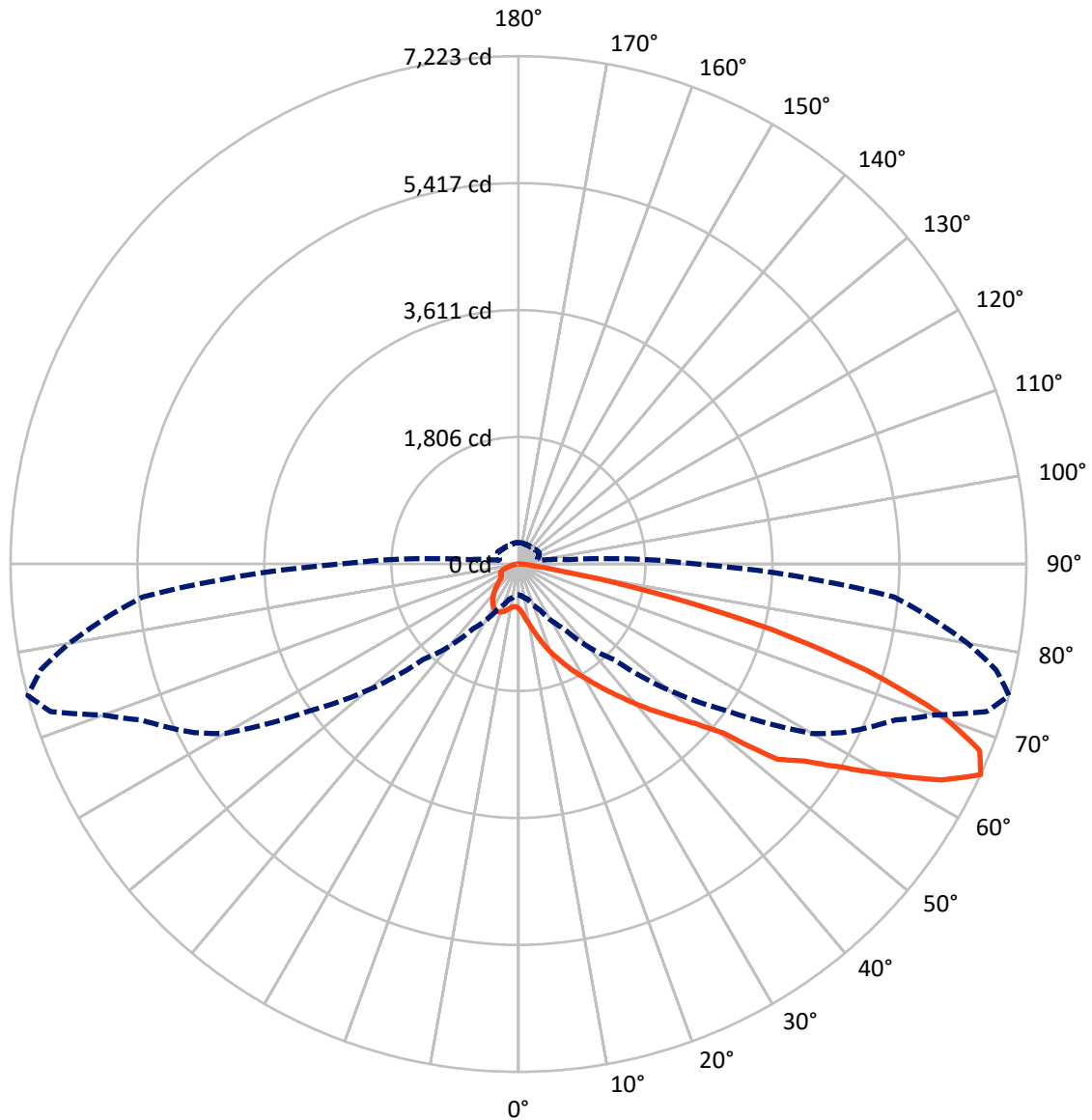
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 18.2 fc
 Type II - Short - Semi-Cutoff

REPORT NUMBER: P270382
CATALOG NUMBER: NAV-AF-02-D-UNV-T2R-7027-600

Luminous Intensity Polar Plot



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

REPORT NUMBER: P270382

CATALOG NUMBER: NAV-AF-02-D-UNV-T2R-7027-600

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1098.0	0.0	1098.0
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	6209.1	0.0	6209.1
	% Fixture	85.0	0.0	85.0
Total	Lumens	7307.1	0.0	7307.1
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	74.7	1.0
10°-20°	285.5	3.9
20°-30°	576.1	7.9
30°-40°	978.4	13.4
40°-50°	1364.7	18.7
50°-60°	1672.6	22.9
60°-70°	1573.7	21.5
70°-80°	690.1	9.4
80°-90°	91.3	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°	7307.1	100.0
0°-180°	7307.1	100.0

Coefficient of Utilization



REPORT NUMBER: P270382

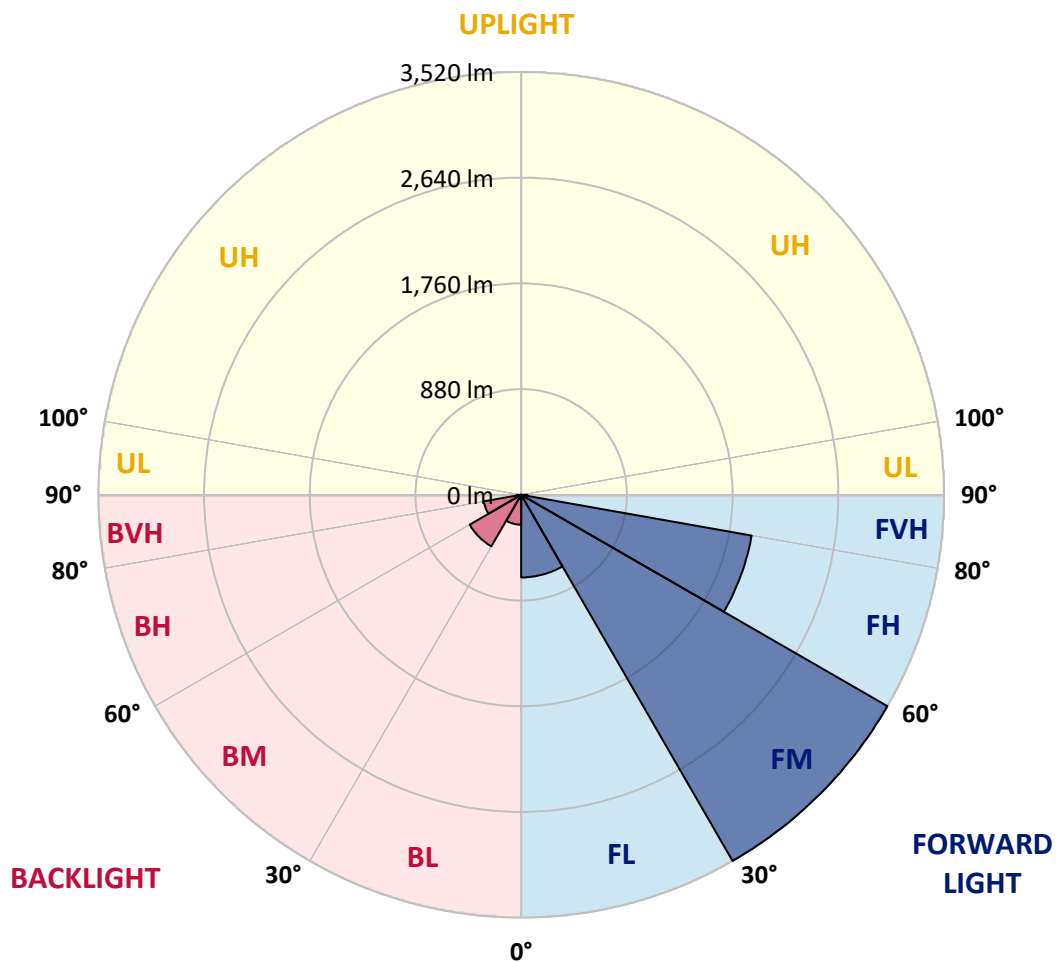
CATALOG NUMBER: NAV-AF-02-D-UNV-T2R-7027-600

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	687.8	9.4			
FM (30°-60°)	3520.2	48.2			
FH (60°-80°)	1948.1	26.7			G2/5000
FVH (80°-90°)	52.9	0.7			G1/100
BL (0°-30°)	248.6	3.4	B1/500		
BM (30°-60°)	495.5	6.8	B1/1000		
BH (60°-80°)	315.6	4.3	B1/500		G1/500
BVH (80°-90°)	38.4	0.5			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

BUG Rating: B1-U0-G2

Type II Short





REPORT NUMBER: P270382

CATALOG NUMBER: NAV-AF-02-D-UNV-T2R-7027-600

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	57.5°	60°	62.5°	65°
0°	633.1	633.1	633.1	633.1	633.1	633.1	633.1	633.1	633.1	633.1	633.1
2.5°	797.2	788.0	788.8	775.9	756.7	735.8	718.6	709.3	701.4	699.2	686.1
5°	1042.7	1031.1	1026.9	997.1	952.5	899.5	846.9	826.5	809.7	799.5	774.3
7.5°	1243.4	1237.4	1231.8	1204.4	1160.3	1092.3	1007.8	977.5	949.7	919.0	888.9
10°	1380.2	1377.8	1375.5	1356.4	1319.7	1260.6	1169.6	1136.5	1101.7	1062.7	1023.1
12.5°	1483.3	1483.3	1485.2	1469.4	1447.1	1401.4	1318.7	1288.1	1252.7	1211.9	1166.8
15°	1552.6	1554.4	1564.2	1568.9	1557.2	1527.9	1455.4	1428.5	1395.0	1354.6	1309.9
17.5°	1598.7	1602.3	1616.7	1632.1	1647.0	1636.7	1582.9	1557.8	1527.5	1490.3	1448.4
20°	1705.5	1700.9	1701.3	1696.7	1718.5	1726.5	1696.7	1675.8	1651.7	1617.7	1579.5
22.5°	1930.0	1921.3	1898.4	1840.3	1813.8	1811.1	1793.3	1782.1	1763.6	1742.3	1704.2
25°	2222.9	2212.6	2167.6	2071.9	1992.8	1919.8	1887.2	1880.3	1868.3	1853.8	1826.3
27.5°	2525.6	2514.4	2456.2	2335.4	2232.2	2084.8	1983.5	1974.1	1963.1	1957.0	1944.0
30°	2791.8	2779.7	2722.7	2599.9	2475.3	2299.7	2113.3	2080.7	2061.6	2063.4	2056.0
32.5°	3025.8	3015.0	2950.8	2825.8	2699.3	2528.8	2281.4	2230.9	2188.0	2172.2	2177.9
35°	3221.9	3212.1	3141.9	3015.9	2888.5	2746.7	2498.0	2421.8	2352.1	2308.5	2303.3
37.5°	3337.2	3331.5	3282.2	3175.4	3048.8	2944.9	2740.6	2656.1	2553.4	2489.7	2461.8
40°	3330.6	3336.7	3328.3	3279.9	3181.8	3106.1	2993.6	2909.9	2809.4	2714.7	2657.9
42.5°	3235.8	3244.1	3281.8	3306.9	3280.4	3234.3	3214.3	3152.2	3062.0	2961.5	2883.0
45°	3105.6	3113.0	3161.9	3252.6	3328.3	3341.2	3407.8	3376.5	3300.5	3214.9	3128.3
47.5°	2906.1	2920.6	2977.3	3121.4	3301.8	3427.4	3570.0	3584.3	3540.3	3469.7	3388.8
50°	2617.5	2636.5	2716.0	2921.1	3201.4	3515.6	3811.2	3866.1	3848.5	3776.8	3695.1
52.5°	2321.8	2341.0	2447.0	2664.9	3039.7	3551.9	4048.8	4189.2	4290.6	4364.4	4378.9
55°	2014.2	2035.6	2151.8	2402.7	2823.9	3505.8	4218.5	4377.9	4480.7	4557.8	4588.9
57.5°	1667.0	1691.1	1803.5	2057.4	2518.9	3320.9	4407.2	4633.1	4786.0	4905.0	4971.9
60°	1268.5	1298.8	1415.5	1671.0	2118.4	2966.7	4491.3	4825.5	5068.6	5247.2	5353.2
62.5°	804.3	834.9	956.2	1221.7	1662.3	2482.7	4253.4	4741.0	5155.6	5419.7	5613.9
65°	438.8	452.2	519.7	719.6	1120.7	1926.3	3650.0	4225.0	4822.3	5196.4	5494.9
67.5°	329.0	330.9	337.9	386.7	596.8	1300.7	2853.6	3380.3	4043.7	4525.2	4881.7
70°	288.1	288.1	289.2	289.7	324.0	704.7	1933.3	2418.1	3026.1	3513.4	3956.2
72.5°	258.4	255.7	254.7	249.2	253.9	361.2	1052.5	1488.0	2000.6	2547.4	2960.6
75°	223.0	222.7	222.7	217.1	219.8	254.3	456.5	714.1	1111.5	1620.5	2027.1
77.5°	193.0	189.6	190.1	186.8	195.7	194.8	216.6	294.3	483.8	851.1	1188.5
80°	159.0	156.7	158.0	156.1	170.0	144.1	146.0	179.9	240.3	373.2	526.1
82.5°	117.6	118.5	127.4	126.4	143.2	97.1	106.9	134.3	161.8	185.9	202.2
85°	68.8	70.2	91.5	96.2	105.0	51.2	65.5	79.9	90.2	99.9	104.2
87.5°	7.5	9.7	51.2	52.6	46.9	15.4	26.5	33.4	35.8	38.1	33.4
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: P270382

CATALOG NUMBER: NAV-AF-02-D-UNV-T2R-7027-600

CANDELA DISTRIBUTION (continued):

	67.5°	70°	72.5°	75°	77.5°	80°	85°	90°	95°	100°	102.5°
0°	633.1	633.1	633.1	633.1	633.1	633.1	633.1	633.1	633.1	633.1	633.1
2.5°	682.0	675.9	669.3	665.6	659.1	653.5	643.4	635.0	625.7	619.2	616.3
5°	761.9	747.5	732.1	721.0	707.1	695.0	671.8	643.8	635.0	616.3	611.7
7.5°	866.0	839.9	814.0	792.6	768.4	748.4	709.3	659.1	652.7	622.9	616.3
10°	988.2	950.1	911.6	878.5	843.1	812.5	754.9	684.2	677.3	639.1	632.6
12.5°	1124.9	1078.4	1028.6	979.4	937.7	894.4	815.8	723.2	712.1	667.0	658.2
15°	1265.8	1215.5	1157.9	1098.4	1046.9	989.7	890.6	774.3	753.9	700.9	688.9
17.5°	1404.8	1350.4	1290.0	1223.5	1163.0	1094.8	971.5	831.7	796.3	734.5	719.2
20°	1539.1	1483.8	1420.1	1355.1	1279.7	1201.7	1054.3	887.9	833.9	762.3	742.4
22.5°	1661.3	1614.0	1550.2	1475.5	1399.2	1311.3	1138.4	944.1	867.0	783.7	758.2
25°	1790.1	1746.8	1683.7	1611.6	1522.8	1425.3	1225.3	997.6	893.5	795.4	763.6
27.5°	1920.2	1883.0	1823.6	1747.8	1652.5	1544.1	1313.6	1046.9	914.8	799.0	761.0
30°	2059.3	2030.4	1975.6	1891.0	1794.8	1674.8	1409.9	1095.2	928.3	793.9	748.4
32.5°	2190.7	2189.9	2141.1	2053.3	1949.5	1817.5	1511.2	1144.0	935.2	779.5	726.5
35°	2327.5	2346.6	2309.8	2226.1	2116.9	1970.5	1623.2	1196.1	935.8	753.9	698.3
37.5°	2482.7	2516.7	2500.4	2420.9	2306.0	2144.9	1754.7	1254.7	932.9	718.6	656.8
40°	2659.4	2705.9	2705.3	2638.4	2515.8	2340.1	1907.7	1320.1	926.4	674.4	608.1
42.5°	2861.6	2916.8	2932.2	2866.2	2742.2	2553.4	2083.0	1392.3	916.2	630.8	556.4
45°	3093.0	3141.9	3170.7	3109.4	2984.8	2785.9	2284.2	1473.9	903.7	574.6	497.4
47.5°	3340.8	3397.6	3440.8	3388.2	3255.3	3050.7	2522.7	1579.5	899.1	510.3	433.7
50°	3648.0	3706.6	3800.1	3776.4	3703.4	3538.9	3027.1	1828.7	900.9	449.5	380.3
52.5°	4410.5	4544.7	4662.8	4610.3	4437.0	4154.8	3437.1	1967.2	861.8	399.7	343.1
55°	4640.6	4792.9	4967.4	4945.4	4779.1	4494.6	3761.1	2083.0	824.1	363.5	318.9
57.5°	5043.1	5222.9	5466.5	5462.0	5257.9	4937.5	4178.0	2221.5	807.8	342.7	306.9
60°	5469.4	5698.5	6035.1	6087.6	5865.8	5532.7	4670.7	2391.6	810.2	330.9	299.9
62.5°	5780.9	6116.9	6606.3	6763.5	6502.2	6135.1	5182.1	2561.7	796.3	317.6	291.5
65°	5799.8	6283.7	6978.3	7222.7	6958.2	6486.4	5362.4	2528.3	712.6	299.3	277.9
67.5°	5335.0	5965.4	6809.1	7077.2	6806.6	6269.8	5046.4	2210.3	579.1	267.8	254.7
70°	4443.5	5175.1	6050.9	6349.8	6126.3	5582.7	4391.9	1765.4	432.8	226.0	219.8
72.5°	3433.9	4116.3	4911.6	5188.2	5017.0	4539.2	3464.0	1286.7	309.1	183.2	178.6
75°	2454.9	3035.9	3613.3	3718.8	3550.0	3111.2	2247.5	803.8	216.6	150.1	143.5
77.5°	1520.0	1897.9	2105.3	1969.5	1754.3	1458.2	914.8	397.1	144.1	122.3	115.7
80°	674.4	791.6	739.0	658.6	520.2	427.7	279.4	176.2	93.0	94.3	90.6
82.5°	226.8	239.8	233.4	231.9	209.1	183.2	118.5	76.3	52.0	60.5	59.0
85°	110.6	115.7	116.2	120.5	104.7	81.3	32.1	30.3	22.3	32.6	34.0
87.5°	33.4	34.0	30.7	33.4	26.9	18.5	6.1	8.4	4.2	7.9	7.9
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: P270382

CATALOG NUMBER: NAV-AF-02-D-UNV-T2R-7027-600

CANDELA DISTRIBUTION (continued):

	105°	107.5°	110°	112.5°	115°	117.5°	120°	122.5°	125°	127.5°	130°
0°	633.1	633.1	633.1	633.1	633.1	633.1	633.1	633.1	633.1	633.1	633.1
2.5°	611.2	609.4	606.1	602.5	601.5	596.8	595.4	593.2	591.8	589.4	587.5
5°	605.6	602.5	598.7	594.6	594.6	588.0	585.2	582.5	582.5	578.2	576.4
7.5°	611.2	607.1	602.9	599.2	600.5	593.2	590.4	587.5	587.1	582.9	581.1
10°	627.0	622.9	617.8	614.0	612.6	606.6	603.4	599.2	596.4	593.6	590.8
12.5°	651.2	645.7	639.1	631.2	628.0	622.9	617.8	612.3	605.6	602.9	598.7
15°	680.0	670.8	662.0	652.2	643.4	638.2	631.2	622.4	613.6	609.9	604.3
17.5°	703.8	694.0	681.5	669.9	654.1	649.8	640.1	629.4	615.0	613.6	605.2
20°	723.8	708.9	693.5	679.6	655.5	653.1	641.0	628.5	608.1	608.1	597.8
22.5°	735.0	714.4	696.4	677.7	647.5	645.7	631.7	616.9	591.8	592.7	580.1
25°	736.8	712.1	689.4	667.0	632.1	629.0	611.2	594.9	567.5	565.8	552.6
27.5°	729.3	700.5	674.0	647.0	609.4	602.5	582.9	563.3	536.5	531.7	517.9
30°	712.1	678.2	648.4	617.3	577.8	566.7	546.2	526.1	498.7	492.7	479.8
32.5°	684.7	646.2	613.2	582.0	538.3	524.3	503.9	483.8	457.3	452.7	440.7
35°	648.4	605.2	570.3	537.4	493.7	479.2	459.8	442.1	417.9	416.1	407.7
37.5°	602.9	557.8	520.6	488.9	447.6	440.2	420.1	407.2	387.2	389.1	385.0
40°	551.3	505.2	470.0	442.1	406.3	399.7	387.7	377.8	360.7	365.8	366.2
42.5°	499.3	453.3	421.1	396.1	365.4	361.2	352.9	347.3	334.2	344.4	348.6
45°	440.2	397.4	370.0	351.0	328.2	328.2	324.0	323.5	314.6	329.0	333.4
47.5°	383.0	349.6	330.4	318.9	303.1	310.5	309.1	312.8	306.3	321.2	324.9
50°	339.7	316.6	305.0	299.3	288.1	299.9	302.5	307.7	302.1	315.1	318.0
52.5°	312.4	297.0	290.5	289.2	281.2	295.6	300.4	305.0	298.4	310.5	310.1
55°	297.0	286.7	284.6	287.3	281.2	295.2	299.9	303.1	297.5	305.9	305.5
57.5°	291.5	285.9	287.3	291.5	287.3	298.9	301.2	305.0	299.3	303.1	305.0
60°	291.1	291.1	296.6	302.1	299.3	307.7	309.1	308.7	303.5	303.9	305.0
62.5°	288.1	295.2	304.4	313.2	312.4	322.6	323.5	317.6	313.2	308.7	307.3
65°	279.4	291.1	304.4	316.6	318.4	334.2	336.1	330.0	327.3	319.3	313.2
67.5°	259.9	274.7	290.5	305.5	308.7	330.0	334.2	336.5	337.9	332.8	324.9
70°	226.8	242.3	258.4	275.7	280.4	303.9	312.8	323.5	332.0	339.3	336.5
72.5°	184.5	198.4	212.4	228.2	235.1	259.9	271.5	290.1	303.1	322.1	330.0
75°	146.5	154.8	163.1	173.0	178.6	202.7	217.1	239.4	257.1	283.5	301.2
77.5°	115.3	119.5	123.6	127.7	130.2	143.5	155.2	177.5	198.0	231.6	257.5
80°	88.8	91.1	91.5	93.0	92.0	98.5	102.8	116.2	133.8	166.8	197.5
82.5°	57.2	59.0	59.9	62.3	57.6	66.0	68.8	70.2	79.5	103.7	125.6
85°	32.1	32.6	33.0	34.0	27.4	35.8	36.2	34.0	33.0	42.8	48.4
87.5°	7.9	7.5	7.9	7.9	3.2	7.5	7.5	5.1	3.8	6.9	5.6
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: P270382

CATALOG NUMBER: NAV-AF-02-D-UNV-T2R-7027-600

CANDELA DISTRIBUTION (continued):

	135°	145°	155°	165°	175°	180°
0°	633.1	633.1	633.1	633.1	633.1	633.1
2.5°	583.4	582.5	582.9	580.6	579.6	580.1
5°	574.0	572.2	572.2	570.9	568.9	568.9
7.5°	578.2	574.6	573.2	570.3	567.5	568.1
10°	584.7	578.2	573.6	569.4	566.2	566.2
12.5°	589.0	577.3	570.3	564.8	561.1	561.1
15°	589.8	572.2	562.0	556.0	552.3	552.3
17.5°	584.3	562.0	549.0	541.0	536.8	537.8
20°	570.3	542.9	527.7	519.2	515.1	515.4
22.5°	548.5	517.0	499.3	489.4	485.4	485.4
25°	518.9	484.4	465.3	457.3	453.6	453.6
27.5°	484.8	449.5	432.8	426.8	424.4	424.4
30°	446.6	417.4	405.3	401.2	397.4	397.4
32.5°	414.7	393.7	389.5	383.9	374.2	373.8
35°	389.1	386.7	383.4	366.8	352.9	351.0
37.5°	375.1	389.1	368.7	339.7	328.6	328.2
40°	367.6	380.7	345.4	331.5	330.0	330.0
42.5°	350.0	359.3	344.1	336.1	336.1	336.5
45°	331.5	339.3	347.3	340.3	342.7	343.1
47.5°	318.4	334.2	347.3	341.1	345.8	348.6
50°	306.3	329.6	340.3	340.3	345.4	345.8
52.5°	303.5	323.1	333.8	338.9	339.3	337.0
55°	303.9	318.0	328.6	335.2	332.4	332.4
57.5°	303.5	315.1	324.5	326.9	328.2	328.2
60°	303.9	311.4	318.9	318.0	322.6	322.6
62.5°	305.5	306.3	310.1	309.1	316.2	316.2
65°	308.7	299.9	297.5	298.4	306.9	306.3
67.5°	314.6	291.1	283.5	284.0	296.1	294.3
70°	323.5	279.0	267.8	265.0	285.4	282.2
72.5°	326.4	265.0	247.4	244.5	256.6	247.4
75°	313.2	253.9	225.5	216.1	211.0	208.2
77.5°	279.4	246.9	202.7	183.2	175.3	173.5
80°	231.6	232.4	173.0	149.7	173.8	173.5
82.5°	174.8	200.9	138.5	129.6	125.9	105.0
85°	84.6	151.1	106.4	89.2	53.4	50.7
87.5°	7.5	63.2	61.4	40.0	18.1	17.2
90°	0.0	0.0	0.0	0.0	0.0	0.0

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