

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: P196754

Luminaire Tested: **NAV-AF-02-D-UNV-T2R-7030-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196754
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-7030-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 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: 8134.4 lumens
Efficiency: N/A
Efficacy: 123.2 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

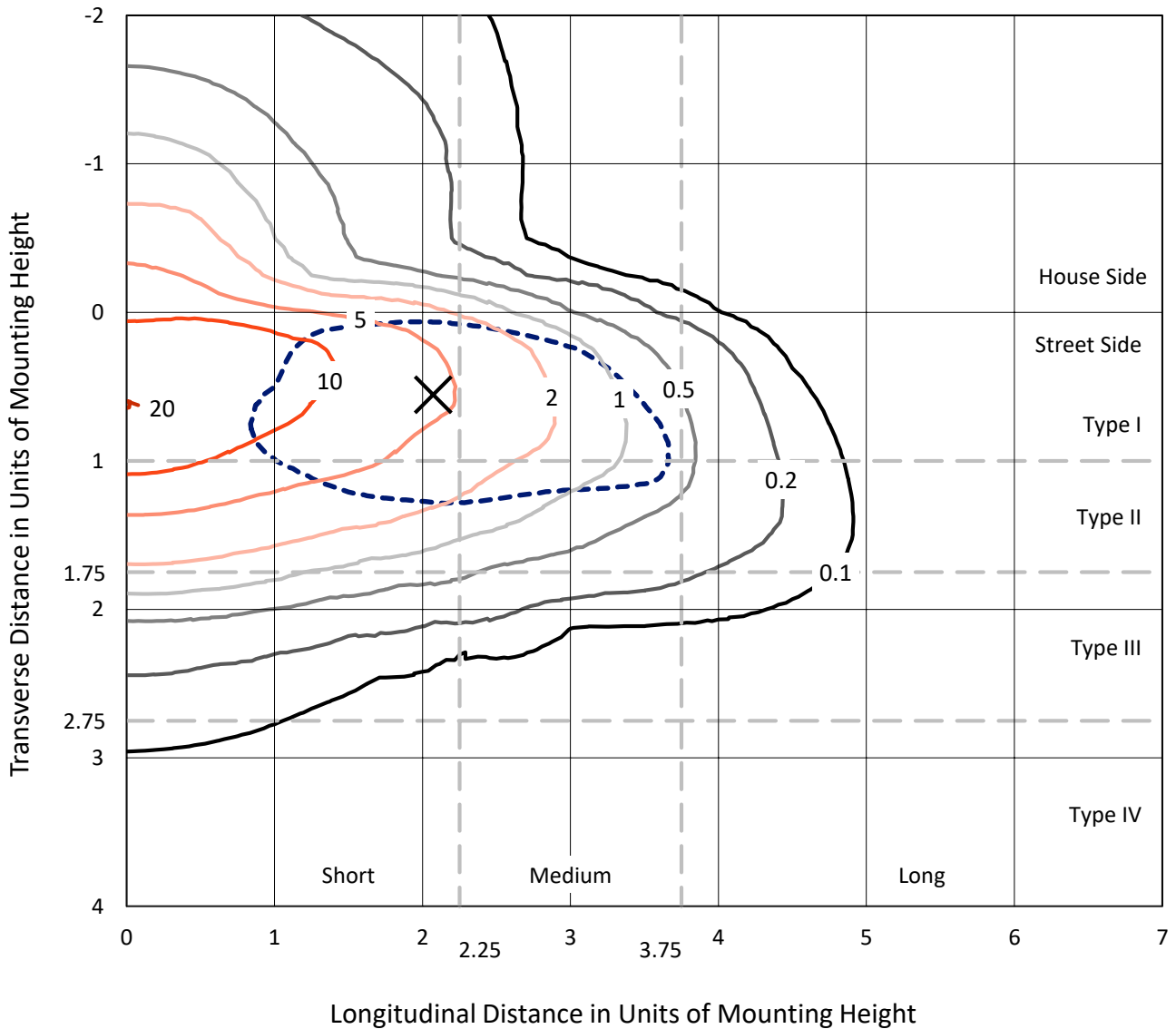


REPORT NUMBER: P196754

CATALOG NUMBER: NAV-AF-02-D-UNV-T2R-7030-600

Iso-Footcandle Lines of Horizontal Illumination

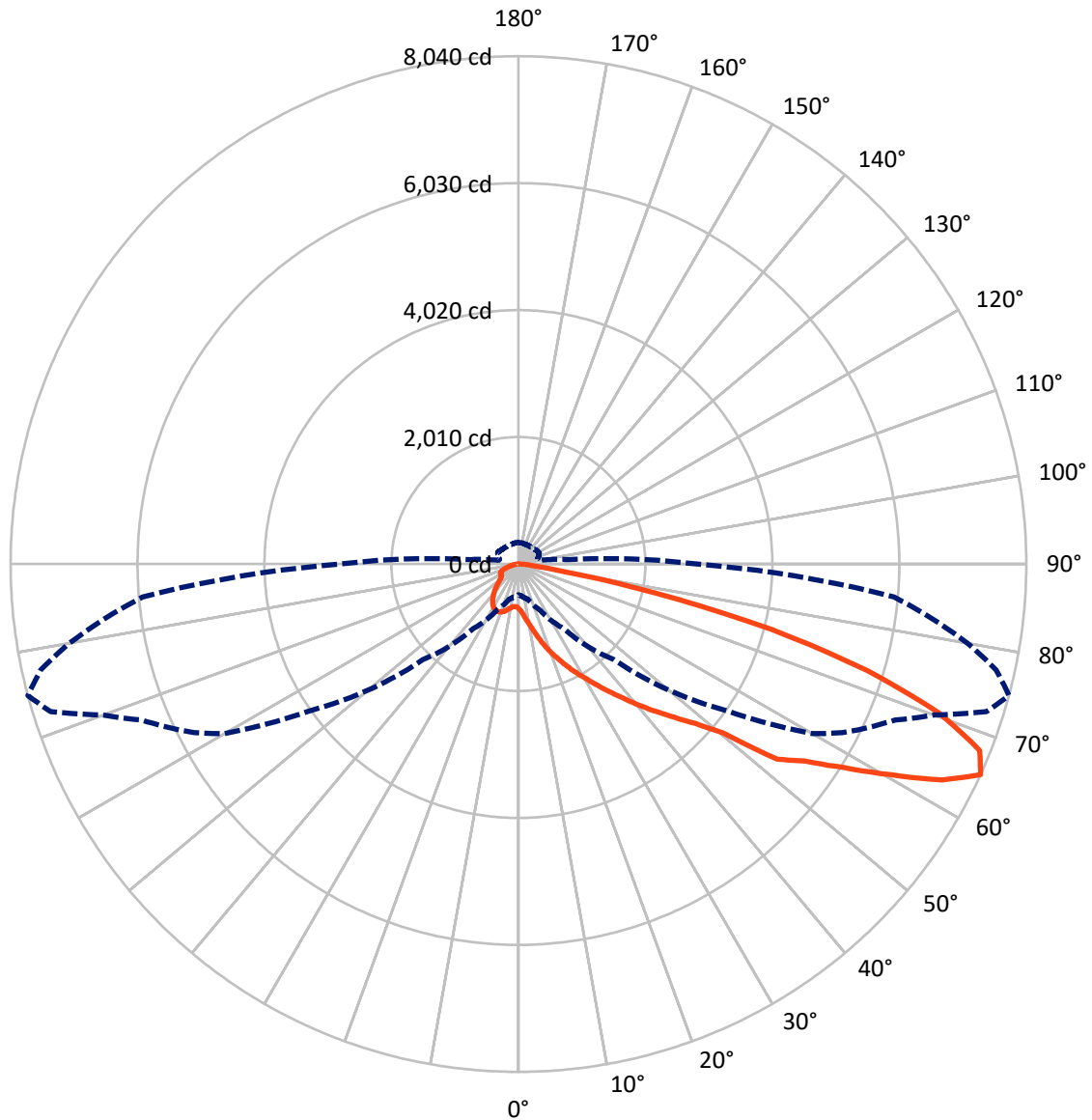
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 20.2 fc
 Type II - Short - Semi-Cutoff

REPORT NUMBER: P196754
CATALOG NUMBER: NAV-AF-02-D-UNV-T2R-7030-600

Luminous Intensity Polar Plot



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

REPORT NUMBER: P196754

CATALOG NUMBER: NAV-AF-02-D-UNV-T2R-7030-600

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1222.3	0.0	1222.3
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	6912.0	0.0	6912.0
	% Fixture	85.0	0.0	85.0
Total	Lumens	8134.4	0.0	8134.4
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	83.2	1.0
10°-20°	317.8	3.9
20°-30°	641.4	7.9
30°-40°	1089.2	13.4
40°-50°	1519.2	18.7
50°-60°	1861.9	22.9
60°-70°	1751.8	21.5
70°-80°	768.2	9.4
80°-90°	101.6	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°	8134.4	100.0
0°-180°	8134.4	100.0

Coefficient of Utilization



REPORT NUMBER: P196754

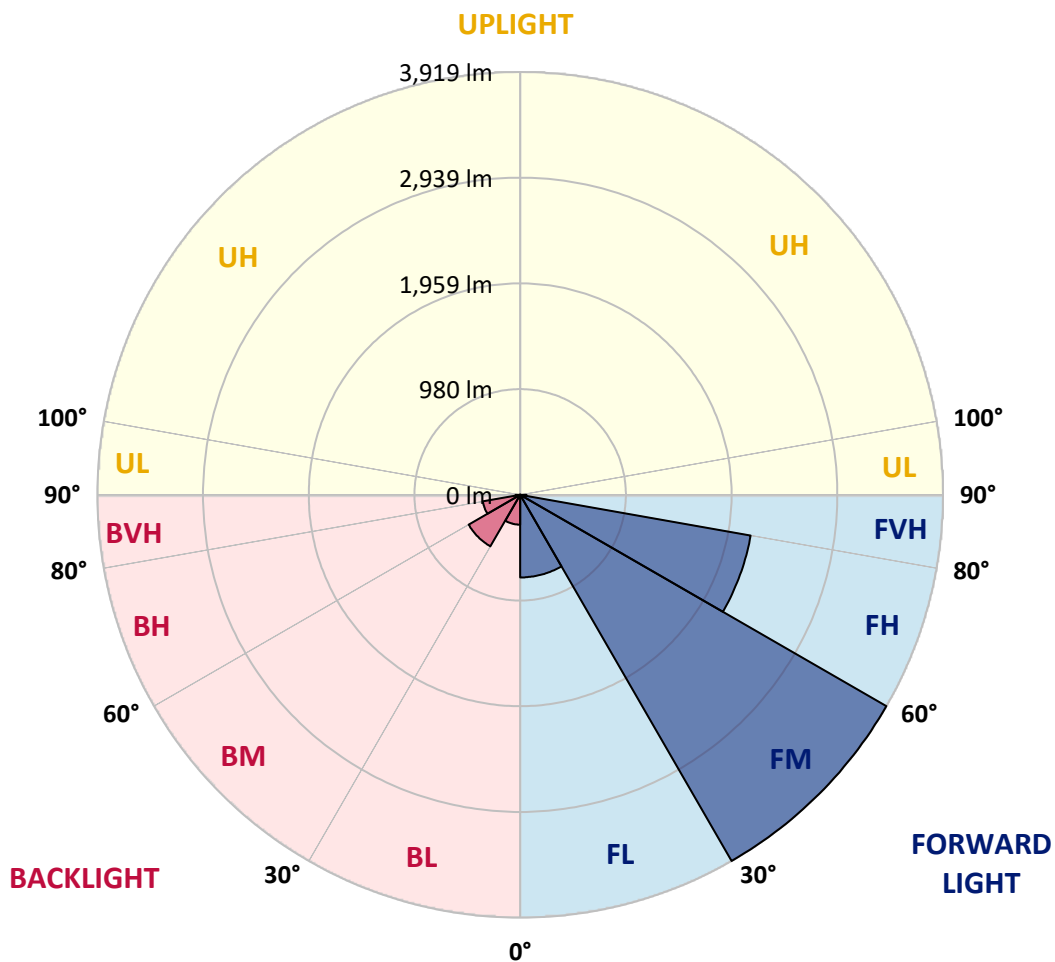
CATALOG NUMBER: NAV-AF-02-D-UNV-T2R-7030-600

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	765.7	9.4			
FM	(30°-60°)	3918.8	48.2			
FH	(60°-80°)	2168.7	26.7			G2/5000
FVH	(80°-90°)	58.9	0.7			G1/100
BL	(0°-30°)	276.7	3.4	B1/500		
BM	(30°-60°)	551.6	6.8	B1/1000		
BH	(60°-80°)	351.3	4.3	B1/500		G1/500
BVH	(80°-90°)	42.7	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: P196754

CATALOG NUMBER: NAV-AF-02-D-UNV-T2R-7030-600

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	57.5°	60°	62.5°	65°
0°	704.8	704.8	704.8	704.8	704.8	704.8	704.8	704.8	704.8	704.8	704.8
2.5°	887.4	877.2	878.1	863.7	842.4	819.1	800.0	789.6	780.8	778.3	763.8
5°	1160.7	1147.8	1143.1	1110.0	1060.3	1001.3	942.8	920.1	901.4	890.0	862.0
7.5°	1384.2	1377.5	1371.3	1340.7	1291.6	1216.0	1121.9	1088.2	1057.2	1023.0	989.5
10°	1536.4	1533.8	1531.2	1510.0	1469.1	1403.3	1302.0	1265.2	1226.4	1183.0	1138.9
12.5°	1651.2	1651.2	1653.3	1635.7	1610.9	1560.1	1468.0	1433.9	1394.5	1349.1	1298.9
15°	1728.4	1730.4	1741.3	1746.5	1733.5	1700.9	1620.2	1590.2	1552.9	1507.9	1458.2
17.5°	1779.7	1783.7	1799.7	1816.9	1833.4	1822.0	1762.1	1734.1	1700.4	1659.0	1612.4
20°	1898.6	1893.5	1893.9	1888.8	1913.1	1921.9	1888.8	1865.5	1838.7	1800.8	1758.3
22.5°	2148.5	2138.8	2113.3	2048.6	2019.1	2016.1	1996.3	1983.9	1963.3	1939.5	1897.1
25°	2474.5	2463.1	2413.0	2306.4	2218.4	2137.1	2100.9	2093.2	2079.8	2063.7	2033.1
27.5°	2811.5	2799.0	2734.3	2599.8	2484.9	2320.8	2208.0	2197.6	2185.3	2178.5	2164.1
30°	3107.9	3094.4	3030.9	2894.2	2755.5	2560.0	2352.5	2316.2	2295.0	2297.0	2288.8
32.5°	3368.3	3356.3	3284.9	3145.7	3004.9	2815.1	2539.7	2483.4	2435.7	2418.1	2424.4
35°	3586.6	3575.7	3497.6	3357.3	3215.5	3057.7	2780.8	2696.0	2618.4	2569.8	2564.1
37.5°	3715.0	3708.7	3653.8	3534.9	3394.0	3278.3	3050.9	2956.8	2842.5	2771.6	2740.5
40°	3707.7	3714.4	3705.1	3651.2	3542.0	3457.7	3332.5	3239.3	3127.5	3022.0	2958.8
42.5°	3602.1	3611.4	3653.3	3681.3	3651.8	3600.5	3578.2	3509.0	3408.6	3296.8	3209.4
45°	3457.2	3465.4	3519.8	3620.8	3705.1	3719.5	3793.6	3758.8	3674.1	3578.8	3482.5
47.5°	3235.1	3251.2	3314.4	3474.8	3675.6	3815.4	3974.2	3990.1	3941.1	3862.5	3772.4
50°	2913.8	2935.0	3023.5	3251.8	3563.8	3913.6	4242.7	4303.8	4284.2	4204.4	4113.4
52.5°	2584.7	2606.0	2724.0	2966.6	3383.8	3954.0	4507.2	4663.4	4776.3	4858.5	4874.6
55°	2242.2	2266.0	2395.4	2674.7	3143.6	3902.7	4696.1	4873.5	4987.9	5073.8	5108.4
57.5°	1855.7	1882.5	2007.7	2290.3	2804.1	3696.8	4906.1	5157.6	5327.8	5460.3	5534.8
60°	1412.1	1445.8	1575.7	1860.2	2358.2	3302.5	4999.8	5371.8	5642.4	5841.2	5959.2
62.5°	895.3	929.4	1064.4	1360.0	1850.5	2763.8	4734.9	5277.7	5739.3	6033.2	6249.4
65°	488.5	503.4	578.5	801.1	1247.6	2144.4	4063.2	4703.3	5368.2	5784.7	6117.0
67.5°	366.3	368.4	376.2	430.5	664.4	1447.9	3176.7	3763.0	4501.5	5037.5	5434.4
70°	320.7	320.7	321.9	322.5	360.7	784.5	2152.2	2691.8	3368.7	3911.1	4404.1
72.5°	287.7	284.6	283.5	277.4	282.6	402.1	1171.6	1656.4	2227.1	2835.8	3295.8
75°	248.3	247.9	247.9	241.7	244.7	283.1	508.2	794.9	1237.3	1803.9	2256.6
77.5°	214.8	211.1	211.6	208.0	217.9	216.8	241.1	327.6	538.6	947.5	1323.1
80°	177.0	174.4	175.9	173.8	189.3	160.4	162.5	200.3	267.5	415.5	585.7
82.5°	130.9	131.9	141.8	140.7	159.4	108.1	119.0	149.5	180.1	206.9	225.1
85°	76.6	78.1	101.9	107.1	116.9	57.0	72.9	89.0	100.4	111.2	116.0
87.5°	8.3	10.8	57.0	58.5	52.2	17.1	29.5	37.2	39.9	42.4	37.2
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: P196754

CATALOG NUMBER: NAV-AF-02-D-UNV-T2R-7030-600

CANDELA DISTRIBUTION (continued):

	67.5°	70°	72.5°	75°	77.5°	80°	85°	90°	95°	100°	102.5°
0°	704.8	704.8	704.8	704.8	704.8	704.8	704.8	704.8	704.8	704.8	704.8
2.5°	759.2	752.4	745.1	741.0	733.7	727.5	716.2	706.9	696.5	689.3	686.1
5°	848.2	832.1	815.0	802.6	787.1	773.7	747.8	716.7	706.9	686.1	681.0
7.5°	964.0	935.0	906.1	882.3	855.4	833.1	789.6	733.7	726.6	693.4	686.1
10°	1100.1	1057.7	1014.8	978.0	938.6	904.5	840.4	761.7	754.0	711.5	704.2
12.5°	1252.2	1200.5	1145.1	1090.3	1043.8	995.6	908.2	805.1	792.7	742.5	732.7
15°	1409.1	1353.1	1289.0	1222.8	1165.4	1101.7	991.4	862.0	839.3	780.3	766.9
17.5°	1563.8	1503.3	1436.0	1362.0	1294.7	1218.7	1081.5	925.8	886.4	817.6	800.6
20°	1713.3	1651.8	1580.9	1508.5	1424.6	1337.7	1173.7	988.4	928.3	848.6	826.4
22.5°	1849.4	1796.7	1725.7	1642.5	1557.6	1459.8	1267.3	1051.0	965.1	872.4	844.0
25°	1992.8	1944.6	1874.3	1794.0	1695.2	1586.6	1364.0	1110.5	994.6	885.4	850.1
27.5°	2137.6	2096.2	2030.0	1945.7	1839.6	1718.9	1462.3	1165.4	1018.4	889.5	847.1
30°	2292.4	2260.3	2199.3	2105.1	1998.0	1864.4	1569.5	1219.2	1033.4	883.8	833.1
32.5°	2438.7	2437.8	2383.5	2285.7	2170.2	2023.3	1682.3	1273.5	1041.1	867.8	808.8
35°	2591.0	2612.2	2571.3	2478.1	2356.5	2193.6	1807.0	1331.5	1041.7	839.3	777.3
37.5°	2763.8	2801.6	2783.5	2695.0	2567.1	2387.7	1953.4	1396.7	1038.5	800.0	731.2
40°	2960.5	3012.2	3011.6	2937.1	2800.6	2605.0	2123.7	1469.6	1031.3	750.8	676.9
42.5°	3185.6	3247.0	3264.2	3190.7	3052.6	2842.5	2318.8	1549.9	1019.9	702.2	619.4
45°	3443.2	3497.6	3529.6	3461.4	3322.7	3101.3	2542.8	1640.8	1006.0	639.6	553.7
47.5°	3719.0	3782.2	3830.3	3771.8	3623.8	3396.1	2808.3	1758.3	1000.9	568.1	482.8
50°	4061.0	4126.2	4230.3	4203.9	4122.7	3939.5	3369.8	2035.7	1002.9	500.4	423.3
52.5°	4909.8	5059.2	5190.7	5132.2	4939.3	4625.2	3826.2	2189.9	959.4	445.0	381.9
55°	5165.9	5335.5	5529.7	5505.3	5320.1	5003.4	4186.9	2318.8	917.4	404.7	355.0
57.5°	5614.0	5814.2	6085.4	6080.3	5853.1	5496.5	4651.0	2473.0	899.3	381.5	341.6
60°	6088.6	6343.6	6718.3	6776.8	6529.9	6159.0	5199.5	2662.3	901.9	368.4	333.8
62.5°	6435.3	6809.4	7354.2	7529.2	7238.3	6829.6	5768.8	2851.7	886.4	353.5	324.5
65°	6456.4	6995.1	7768.3	8040.4	7745.9	7220.7	5969.5	2814.5	793.3	333.2	309.4
67.5°	5939.0	6640.7	7579.9	7878.4	7577.2	6979.6	5617.7	2460.5	644.7	298.1	283.5
70°	4946.5	5761.0	6735.9	7068.6	6819.8	6214.7	4889.1	1965.3	481.8	251.6	244.7
72.5°	3822.6	4582.3	5467.6	5775.5	5585.0	5053.1	3856.2	1432.4	344.1	203.9	198.8
75°	2732.8	3379.6	4022.3	4139.8	3951.9	3463.4	2501.9	894.8	241.1	167.1	159.8
77.5°	1692.1	2112.8	2343.6	2192.5	1952.9	1623.3	1018.4	442.0	160.4	136.1	128.8
80°	750.8	881.2	822.7	733.2	579.1	476.1	311.0	196.1	103.5	105.0	100.9
82.5°	252.5	267.0	259.8	258.2	232.8	203.9	131.9	84.9	57.9	67.3	65.7
85°	123.1	128.8	129.4	134.1	116.5	90.5	35.7	33.7	24.8	36.3	37.8
87.5°	37.2	37.8	34.2	37.2	30.0	20.6	6.8	9.3	4.7	8.8	8.8
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: P196754

CATALOG NUMBER: NAV-AF-02-D-UNV-T2R-7030-600

CANDELA DISTRIBUTION (continued):

	105°	107.5°	110°	112.5°	115°	117.5°	120°	122.5°	125°	127.5°	130°
0°	704.8	704.8	704.8	704.8	704.8	704.8	704.8	704.8	704.8	704.8	704.8
2.5°	680.4	678.4	674.7	670.7	669.6	664.4	662.8	660.3	658.8	656.1	654.0
5°	674.2	670.7	666.5	661.9	661.9	654.6	651.5	648.4	648.4	643.7	641.7
7.5°	680.4	675.8	671.2	667.0	668.5	660.3	657.2	654.0	653.6	648.9	646.9
10°	698.0	693.4	687.7	683.5	682.0	675.3	671.7	667.0	663.9	660.8	657.7
12.5°	724.9	718.8	711.5	702.7	699.1	693.4	687.7	681.6	674.2	671.2	666.5
15°	757.0	746.7	736.9	726.0	716.2	710.5	702.7	692.9	683.1	678.9	672.7
17.5°	783.5	772.6	758.6	745.7	728.1	723.4	712.6	700.7	684.6	683.1	673.7
20°	805.7	789.2	772.0	756.5	729.7	727.0	713.6	699.6	676.9	676.9	665.5
22.5°	818.2	795.3	775.2	754.4	720.8	718.8	703.2	686.7	658.8	659.8	645.8
25°	820.2	792.7	767.4	742.5	703.7	700.2	680.4	662.3	631.8	629.8	615.2
27.5°	811.9	779.8	750.3	720.3	678.4	670.7	648.9	627.1	597.2	591.9	576.5
30°	792.7	755.0	721.8	687.2	643.2	630.8	608.0	585.7	555.2	548.5	534.1
32.5°	762.2	719.3	682.6	647.9	599.2	583.7	560.9	538.6	509.1	504.0	490.6
35°	721.8	673.7	634.9	598.2	549.6	533.5	511.8	492.1	465.2	463.2	453.9
37.5°	671.2	620.9	579.5	544.3	498.3	490.0	467.7	453.3	431.0	433.1	428.6
40°	613.7	562.4	523.2	492.1	452.3	445.0	431.6	420.6	401.5	407.2	407.7
42.5°	555.8	504.6	468.8	440.9	406.8	402.1	392.8	386.6	372.0	383.4	388.1
45°	490.0	442.4	411.9	390.7	365.4	365.4	360.7	360.1	350.2	366.3	371.1
47.5°	426.4	389.2	367.8	355.0	337.4	345.7	344.1	348.2	341.0	357.6	361.7
50°	378.2	352.4	339.5	333.2	320.7	333.8	336.8	342.5	336.3	350.8	354.0
52.5°	347.8	330.6	323.4	321.9	313.0	329.1	334.4	339.5	332.2	345.7	345.2
55°	330.6	319.2	316.8	319.8	313.0	328.6	333.8	337.4	331.2	340.5	340.1
57.5°	324.5	318.3	319.8	324.5	319.8	332.7	335.3	339.5	333.2	337.4	339.5
60°	324.0	324.0	330.2	336.3	333.2	342.5	344.1	343.6	337.9	338.3	339.5
62.5°	320.7	328.6	338.9	348.7	347.8	359.1	360.1	353.5	348.7	343.6	342.1
65°	311.0	324.0	338.9	352.4	354.4	372.0	374.1	367.4	364.3	355.5	348.7
67.5°	289.3	305.8	323.4	340.1	343.6	367.4	372.0	374.6	376.2	370.5	361.7
70°	252.5	269.7	287.7	306.9	312.1	338.3	348.2	360.1	369.6	377.7	374.6
72.5°	205.4	220.9	236.4	254.0	261.7	289.3	302.2	322.9	337.4	358.6	367.4
75°	163.1	172.3	181.6	192.6	198.8	225.6	241.7	266.5	286.2	315.6	335.3
77.5°	128.4	133.0	137.6	142.2	144.9	159.8	172.8	197.6	220.4	257.8	286.7
80°	98.9	101.4	101.9	103.5	102.4	109.7	114.4	129.4	149.0	185.7	219.9
82.5°	63.7	65.7	66.7	69.4	64.1	73.5	76.6	78.1	88.5	115.4	139.8
85°	35.7	36.3	36.7	37.8	30.5	39.9	40.3	37.8	36.7	47.6	53.9
87.5°	8.8	8.3	8.8	8.8	3.6	8.3	8.3	5.7	4.2	7.7	6.2
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: P196754

CATALOG NUMBER: NAV-AF-02-D-UNV-T2R-7030-600

CANDELA DISTRIBUTION (continued):

	135°	145°	155°	165°	175°	180°
0°	704.8	704.8	704.8	704.8	704.8	704.8
2.5°	649.4	648.4	648.9	646.3	645.2	645.8
5°	639.0	637.0	637.0	635.5	633.3	633.3
7.5°	643.7	639.6	638.1	634.9	631.8	632.4
10°	650.9	643.7	638.5	633.9	630.3	630.3
12.5°	655.7	642.7	634.9	628.7	624.6	624.6
15°	656.6	637.0	625.6	618.9	614.8	614.8
17.5°	650.4	625.6	611.1	602.3	597.6	598.7
20°	634.9	604.4	587.4	578.0	573.4	573.8
22.5°	610.6	575.5	555.8	544.8	540.3	540.3
25°	577.6	539.2	518.0	509.1	505.0	505.0
27.5°	539.7	500.4	481.8	475.1	472.4	472.4
30°	497.2	464.7	451.2	446.6	442.4	442.4
32.5°	461.6	438.3	433.6	427.4	416.6	416.1
35°	433.1	430.5	426.8	408.3	392.8	390.7
37.5°	417.6	433.1	410.4	378.2	365.8	365.4
40°	409.2	423.8	384.5	369.0	367.4	367.4
42.5°	389.6	400.0	383.0	374.1	374.1	374.6
45°	369.0	377.7	386.6	378.8	381.5	381.9
47.5°	354.4	372.0	386.6	379.7	385.0	388.1
50°	341.0	366.9	378.8	378.8	384.5	385.0
52.5°	337.9	359.7	371.6	377.3	377.7	375.2
55°	338.3	354.0	365.8	373.1	370.0	370.0
57.5°	337.9	350.8	361.2	363.9	365.4	365.4
60°	338.3	346.7	355.0	354.0	359.1	359.1
62.5°	340.1	341.0	345.2	344.1	352.0	352.0
65°	343.6	333.8	331.2	332.2	341.6	341.0
67.5°	350.2	324.0	315.6	316.2	329.6	327.6
70°	360.1	310.6	298.1	295.0	317.7	314.1
72.5°	363.3	295.0	275.4	272.2	285.6	275.4
75°	348.7	282.6	251.0	240.6	234.9	231.8
77.5°	311.0	274.8	225.6	203.9	195.1	193.1
80°	257.8	258.7	192.6	166.6	193.5	193.1
82.5°	194.6	223.6	154.2	144.3	140.2	116.9
85°	94.2	168.2	118.5	99.3	59.5	56.4
87.5°	8.3	70.4	68.3	44.5	20.2	19.1
90°	0.0	0.0	0.0	0.0	0.0	0.0

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