

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: P270462

Luminaire Tested: **NAV-AF-03-D-UNV-T2R-7027-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P270462
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-03-D-UNV-T2R-7027-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(3) 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: 10866 lumens
Efficiency: N/A
Efficacy: 113.2 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1.5' x H: 0')
IES Classification: Type II - Short - Semi-Cutoff
BUG Rating: B1 - U0 - G2

Input Watts (W): 96
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

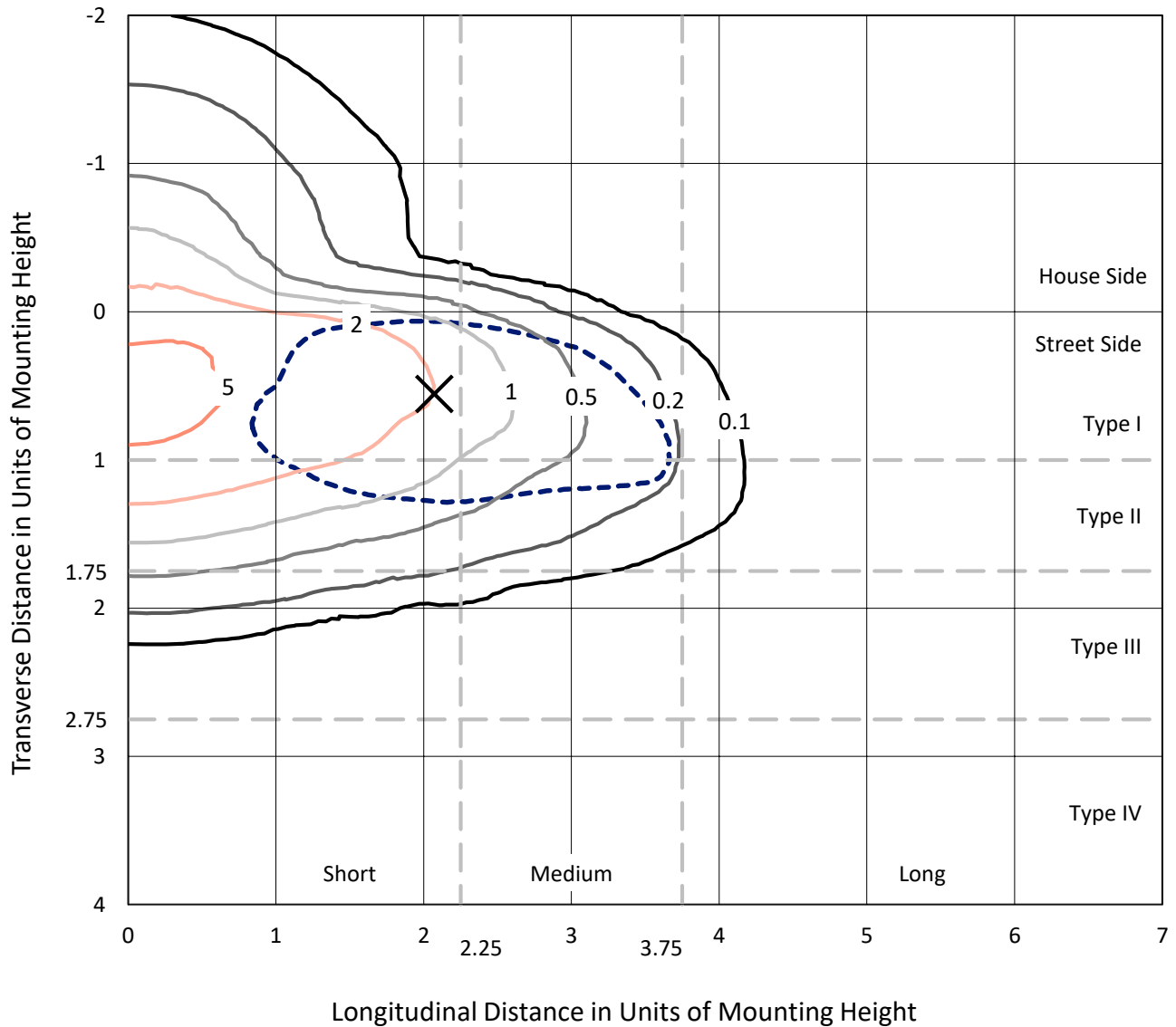


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Iso-Footcandle Lines of Horizontal Illumination

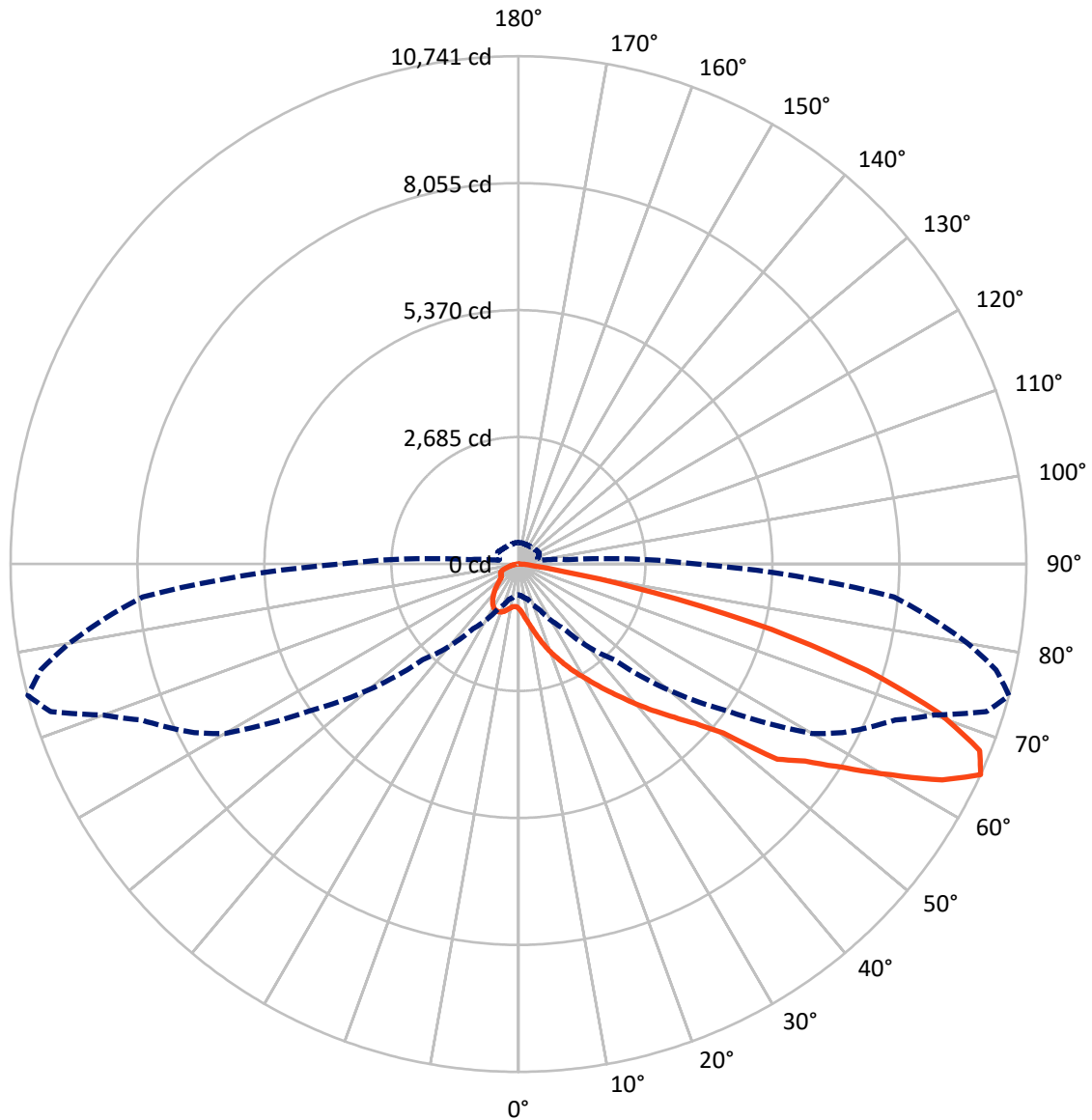
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 6.8 fc
 Type II - Short - Semi-Cutoff

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Luminous Intensity Polar Plot



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

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1632.8	0.0	1632.8
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	9233.2	0.0	9233.2
	% Fixture	85.0	0.0	85.0
Total	Lumens	10866.0	0.0	10866.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	111.1	1.0
10°-20°	424.5	3.9
20°-30°	856.7	7.9
30°-40°	1455.0	13.4
40°-50°	2029.3	18.7
50°-60°	2487.2	22.9
60°-70°	2340.1	21.5
70°-80°	1026.1	9.4
80°-90°	135.8	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°	10866.0	100.0
0°-180°	10866.0	100.0



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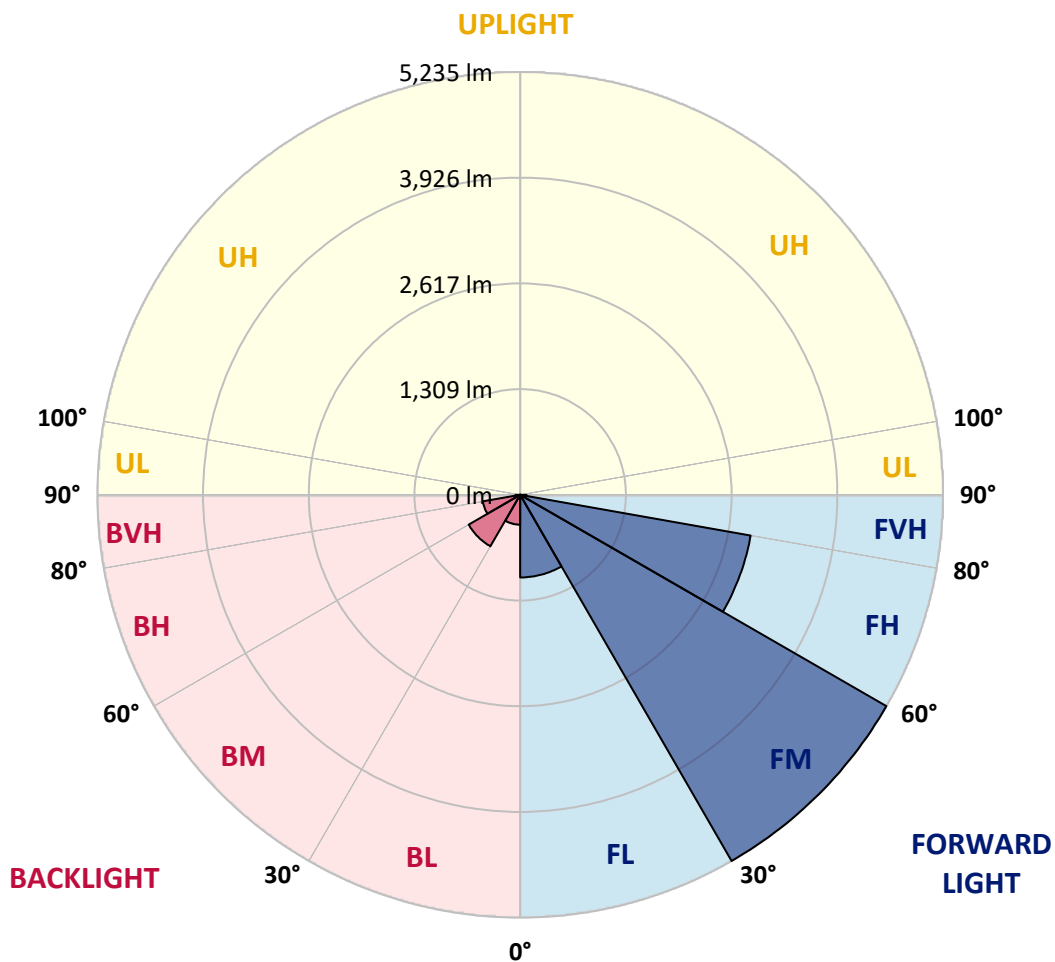
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1022.8	9.4			
FM (30°-60°)	5234.7	48.2			
FH (60°-80°)	2897.0	26.7			G2/5000
FVH (80°-90°)	78.7	0.7			G1/100
BL (0°-30°)	369.6	3.4	B1/500		
BM (30°-60°)	736.8	6.8	B1/1000		
BH (60°-80°)	469.3	4.3	B1/500		G1/500
BVH (80°-90°)	57.1	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





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	57.5°	60°	62.5°	65°
0°	941.5	941.5	941.5	941.5	941.5	941.5	941.5	941.5	941.5	941.5	941.5
2.5°	1185.5	1171.7	1173.0	1153.7	1125.3	1094.2	1068.7	1054.8	1043.1	1039.6	1020.3
5°	1550.5	1533.1	1526.9	1482.7	1416.4	1337.5	1259.5	1229.1	1204.2	1188.9	1151.5
7.5°	1849.2	1840.1	1831.9	1791.0	1725.4	1624.5	1498.6	1453.6	1412.2	1366.6	1321.6
10°	2052.3	2048.9	2045.4	2017.1	1962.4	1874.7	1739.2	1690.2	1638.2	1580.2	1521.4
12.5°	2205.8	2205.8	2208.6	2184.9	2151.8	2084.1	1961.1	1915.5	1862.8	1802.1	1735.0
15°	2308.7	2311.5	2326.0	2333.0	2315.7	2272.2	2164.2	2124.2	2074.5	2014.3	1948.0
17.5°	2377.2	2382.8	2404.1	2427.0	2449.0	2433.9	2353.6	2316.4	2271.5	2216.1	2153.9
20°	2536.2	2529.3	2529.9	2523.0	2555.5	2567.3	2523.0	2491.9	2456.0	2405.5	2348.9
22.5°	2870.1	2856.9	2823.1	2736.6	2697.3	2693.1	2666.8	2650.2	2622.6	2590.8	2534.1
25°	3305.6	3290.3	3223.3	3080.8	2963.4	2854.9	2806.5	2796.1	2778.1	2756.7	2715.8
27.5°	3755.5	3738.9	3652.5	3472.8	3319.3	3100.2	2949.6	2935.8	2919.1	2910.1	2890.7
30°	4151.5	4133.6	4048.7	3866.1	3680.8	3419.6	3142.5	3094.0	3065.6	3068.4	3057.3
32.5°	4499.3	4483.4	4388.0	4202.0	4014.0	3760.3	3392.5	3317.4	3253.8	3230.1	3238.5
35°	4791.0	4776.5	4672.2	4484.8	4295.3	4084.6	3714.8	3601.3	3497.7	3432.8	3425.1
37.5°	4962.4	4954.2	4880.9	4721.9	4533.8	4379.0	4075.6	3949.8	3797.0	3702.3	3660.9
40°	4952.7	4961.7	4949.3	4877.3	4731.6	4618.8	4451.6	4327.1	4177.8	4036.9	3952.5
42.5°	4811.7	4824.2	4880.1	4917.5	4878.1	4809.6	4779.9	4687.3	4553.1	4403.9	4287.2
45°	4618.1	4629.2	4701.8	4836.7	4949.3	4968.6	5067.5	5021.2	4907.8	4780.6	4652.1
47.5°	4321.7	4343.0	4427.3	4641.7	4909.9	5096.5	5308.8	5330.2	5264.4	5159.4	5039.1
50°	3892.4	3920.7	4038.9	4343.8	4760.6	5227.9	5667.4	5749.1	5722.8	5616.4	5494.8
52.5°	3452.7	3481.1	3638.7	3963.0	4520.0	5281.8	6020.7	6229.4	6380.1	6490.1	6511.5
55°	2995.2	3027.0	3199.8	3573.0	4199.2	5213.4	6273.0	6510.0	6662.9	6777.6	6824.0
57.5°	2478.9	2514.7	2682.0	3059.4	3745.8	4938.3	6553.7	6889.6	7117.0	7294.0	7393.5
60°	1886.4	1931.4	2104.8	2485.0	3149.9	4411.4	6678.8	7175.8	7537.3	7802.8	7960.3
62.5°	1195.9	1241.5	1421.8	1816.6	2471.9	3691.9	6324.8	7050.0	7666.6	8059.1	8348.0
65°	652.4	672.7	772.8	1070.1	1666.5	2864.5	5427.6	6282.7	7170.9	7727.4	8171.2
67.5°	489.3	492.2	502.5	575.2	887.5	1934.1	4243.6	5026.7	6013.2	6729.3	7259.5
70°	428.6	428.6	430.0	430.6	481.9	1048.0	2874.8	3595.8	4500.0	5224.5	5883.2
72.5°	384.4	380.3	378.7	370.6	377.4	537.0	1564.9	2212.6	2975.0	3788.1	4402.6
75°	331.8	331.1	331.1	322.9	327.0	378.0	678.8	1061.7	1652.7	2409.7	3014.5
77.5°	286.9	282.0	282.7	277.8	291.1	289.7	322.1	437.6	719.6	1265.6	1767.5
80°	236.4	232.9	235.0	232.2	253.1	214.2	217.0	267.5	357.3	555.1	782.5
82.5°	174.9	176.2	189.5	188.0	212.9	144.4	159.0	199.8	240.6	276.5	300.8
85°	102.2	104.4	136.2	143.1	156.2	76.0	97.5	118.8	134.0	148.6	154.9
87.5°	11.0	14.6	76.0	78.2	69.8	22.7	39.3	49.8	53.2	56.8	49.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	67.5°	70°	72.5°	75°	77.5°	80°	85°	90°	95°	100°	102.5°
0°	941.5	941.5	941.5	941.5	941.5	941.5	941.5	941.5	941.5	941.5	941.5
2.5°	1014.0	1005.1	995.4	989.8	980.2	971.8	956.7	944.3	930.5	920.8	916.6
5°	1132.9	1111.6	1088.7	1072.0	1051.3	1033.4	998.8	957.4	944.3	916.6	909.7
7.5°	1287.8	1249.1	1210.3	1178.5	1142.6	1112.9	1054.8	980.2	970.4	926.2	916.6
10°	1469.5	1412.9	1355.5	1306.5	1253.9	1208.3	1122.6	1017.5	1007.1	950.4	940.7
12.5°	1672.9	1603.7	1529.8	1456.4	1394.2	1329.9	1213.2	1075.6	1059.0	991.9	978.9
15°	1882.3	1807.6	1722.0	1633.4	1556.7	1471.7	1324.5	1151.5	1121.2	1042.5	1024.3
17.5°	2088.9	2008.0	1918.2	1819.3	1729.4	1627.9	1444.7	1236.6	1184.1	1092.2	1069.3
20°	2288.7	2206.4	2111.7	2015.0	1903.0	1786.9	1567.7	1320.2	1240.1	1133.7	1103.8
22.5°	2470.5	2400.0	2305.3	2194.0	2080.7	1950.0	1692.9	1404.0	1289.2	1165.5	1127.5
25°	2661.9	2597.7	2503.7	2396.6	2264.4	2119.3	1822.1	1483.5	1328.6	1182.7	1135.6
27.5°	2855.5	2800.2	2711.8	2599.1	2457.4	2296.2	1953.5	1556.7	1360.4	1188.3	1131.5
30°	3062.2	3019.4	2937.7	2812.0	2668.9	2490.6	2096.6	1628.5	1380.4	1180.6	1112.9
32.5°	3257.9	3256.4	3183.9	3053.2	2899.1	2702.7	2247.2	1701.1	1390.8	1159.3	1080.4
35°	3461.0	3489.3	3434.8	3310.3	3147.9	2930.2	2413.8	1778.6	1391.5	1121.2	1038.3
37.5°	3691.9	3742.3	3718.2	3600.0	3429.3	3189.4	2609.4	1865.7	1387.3	1068.7	976.7
40°	3954.6	4023.7	4023.0	3923.4	3741.0	3479.8	2836.8	1963.2	1377.6	1003.0	904.1
42.5°	4255.4	4337.6	4360.4	4262.2	4077.6	3797.0	3097.4	2070.2	1362.4	938.0	827.3
45°	4599.5	4672.2	4714.9	4623.8	4438.4	4142.7	3396.9	2192.0	1343.8	854.4	739.7
47.5°	4967.9	5052.2	5116.6	5038.5	4840.7	4536.6	3751.3	2348.9	1336.9	759.0	645.0
50°	5424.9	5512.0	5650.9	5615.7	5507.1	5262.5	4501.3	2719.3	1339.6	668.3	565.5
52.5°	6558.4	6758.3	6933.8	6855.8	6598.0	6178.4	5111.0	2925.3	1281.5	594.5	510.1
55°	6900.7	7127.4	7386.7	7354.2	7106.6	6683.6	5592.8	3097.4	1225.6	540.5	474.1
57.5°	7499.3	7766.7	8129.0	8122.0	7818.7	7342.3	6212.9	3303.4	1201.4	509.5	456.2
60°	8133.2	8473.9	8974.3	9052.5	8722.8	8227.1	6945.5	3556.4	1204.8	492.2	445.9
62.5°	8596.3	9096.1	9824.0	10057.6	9669.0	9122.9	7706.0	3809.4	1184.1	472.1	433.4
65°	8624.5	9344.2	10377.0	10740.6	10347.1	9645.6	7974.2	3759.6	1059.7	445.2	413.4
67.5°	7933.4	8870.8	10125.2	10524.2	10121.8	9323.5	7504.1	3286.9	861.2	398.2	378.7
70°	6607.6	7695.6	8998.0	9442.4	9109.9	8301.7	6530.9	2625.3	643.5	336.0	327.0
72.5°	5106.1	6121.0	7303.7	7715.0	7460.6	6750.0	5151.2	1913.4	459.7	272.4	265.4
75°	3650.4	4514.5	5373.0	5530.0	5279.0	4626.5	3342.1	1195.1	322.1	223.3	213.5
77.5°	2260.3	2822.4	3130.7	2928.8	2608.8	2168.4	1360.4	590.4	214.2	181.7	172.1
80°	1003.0	1177.1	1099.0	979.5	773.5	635.9	415.5	261.9	138.2	140.3	134.7
82.5°	337.4	356.6	347.0	344.9	311.1	272.4	176.2	113.4	77.4	89.9	87.8
85°	164.5	172.1	172.8	179.0	155.5	120.9	47.7	44.9	33.1	48.4	50.5
87.5°	49.8	50.5	45.6	49.8	40.1	27.7	9.1	12.4	6.2	11.8	11.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	105°	107.5°	110°	112.5°	115°	117.5°	120°	122.5°	125°	127.5°	130°
0°	941.5	941.5	941.5	941.5	941.5	941.5	941.5	941.5	941.5	941.5	941.5
2.5°	908.9	906.2	901.4	895.9	894.4	887.5	885.5	882.0	880.0	876.4	873.7
5°	900.7	895.9	890.3	884.1	884.1	874.4	870.3	866.1	866.1	859.9	857.2
7.5°	908.9	902.7	896.6	890.9	893.0	882.0	877.9	873.7	873.1	866.9	864.1
10°	932.5	926.2	918.6	913.1	911.1	902.1	897.2	890.9	886.8	882.8	878.5
12.5°	968.5	960.2	950.4	938.6	933.9	926.2	918.6	910.3	900.7	896.6	890.3
15°	1011.3	997.5	984.4	969.8	956.7	949.1	938.6	925.6	912.5	906.8	898.7
17.5°	1046.5	1032.1	1013.4	996.1	972.5	966.3	951.8	935.9	914.6	912.5	900.0
20°	1076.3	1054.2	1031.3	1010.7	974.7	971.2	953.2	934.5	904.1	904.1	889.0
22.5°	1092.9	1062.4	1035.4	1007.8	963.0	960.2	939.4	917.3	880.0	881.3	862.6
25°	1095.7	1059.0	1025.1	991.9	940.0	935.2	908.9	884.8	844.0	841.3	821.9
27.5°	1084.6	1041.8	1002.2	962.3	906.2	895.9	866.9	837.8	797.7	790.8	770.0
30°	1059.0	1008.4	964.3	918.0	859.1	842.6	812.2	782.5	741.7	732.7	713.3
32.5°	1018.1	960.8	911.8	865.4	800.5	779.6	749.2	719.6	680.1	673.3	655.4
35°	964.3	900.0	848.2	799.1	734.0	712.6	683.6	657.4	621.4	618.7	606.3
37.5°	896.6	829.5	774.2	727.2	665.6	654.7	625.0	605.5	575.9	578.6	572.3
40°	819.9	751.4	698.8	657.4	604.1	594.5	576.5	562.0	536.4	544.1	544.7
42.5°	742.4	674.0	626.3	588.8	543.4	537.0	524.7	516.3	497.0	512.3	518.4
45°	654.7	591.1	550.2	521.8	488.0	488.0	481.9	481.1	467.9	489.3	495.7
47.5°	569.5	519.8	491.5	474.1	450.7	461.8	459.7	465.2	455.5	477.7	483.2
50°	505.2	470.7	453.5	445.2	428.6	445.9	450.1	457.5	449.3	468.6	472.8
52.5°	464.6	441.6	432.1	430.0	418.3	439.6	446.5	453.5	443.9	461.8	461.1
55°	441.6	426.4	423.0	427.1	418.3	438.9	445.9	450.7	442.3	454.8	454.2
57.5°	433.4	425.1	427.1	433.4	427.1	444.5	448.0	453.5	445.2	450.7	453.5
60°	432.8	432.8	441.0	449.3	445.2	457.5	459.7	458.9	451.4	452.0	453.5
62.5°	428.6	438.9	452.7	466.0	464.6	479.8	481.1	472.1	466.0	458.9	456.9
65°	415.5	432.8	452.7	470.7	473.4	497.0	499.7	490.7	486.6	474.8	466.0
67.5°	386.5	408.5	432.1	454.2	458.9	490.7	497.0	500.4	502.5	495.0	483.2
70°	337.4	360.1	384.4	409.8	416.9	452.0	465.2	481.1	493.6	504.6	500.4
72.5°	274.4	295.2	315.9	339.4	349.8	386.5	403.7	431.4	450.7	479.1	490.7
75°	217.7	230.1	242.6	257.2	265.4	301.4	322.9	356.0	382.3	421.7	448.0
77.5°	171.4	177.7	183.9	190.1	193.6	213.5	230.9	264.0	294.5	344.2	382.9
80°	132.1	135.5	136.2	138.2	136.8	146.6	152.7	172.8	199.1	248.1	293.7
82.5°	85.0	87.8	89.2	92.6	85.7	98.2	102.2	104.4	118.1	154.1	186.7
85°	47.7	48.4	49.0	50.5	40.9	53.2	53.9	50.5	49.0	63.6	71.9
87.5°	11.8	11.0	11.8	11.8	4.9	11.0	11.0	7.5	5.5	10.4	8.4
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CATALOG NUMBER: NAV-AF-03-D-UNV-T2R-7027-600

CANDELA DISTRIBUTION (continued):

	135°	145°	155°	165°	175°	180°
0°	941.5	941.5	941.5	941.5	941.5	941.5
2.5°	867.6	866.1	866.9	863.5	862.0	862.6
5°	853.7	851.0	851.0	848.9	846.1	846.1
7.5°	859.9	854.4	852.3	848.2	844.0	844.6
10°	869.6	859.9	853.0	846.7	841.9	841.9
12.5°	875.8	858.5	848.2	839.8	834.3	834.3
15°	877.1	851.0	835.8	826.7	821.2	821.2
17.5°	868.9	835.8	816.4	804.6	798.4	799.9
20°	848.2	807.3	784.6	772.2	765.9	766.7
22.5°	815.8	768.7	742.4	727.8	721.7	721.7
25°	771.5	720.4	692.0	680.1	674.6	674.6
27.5°	721.0	668.3	643.5	634.6	631.1	631.1
30°	664.2	620.6	602.8	596.6	591.1	591.1
32.5°	616.5	585.4	579.2	571.0	556.4	555.7
35°	578.6	575.2	570.2	545.5	524.7	521.8
37.5°	557.8	578.6	548.1	505.2	488.7	488.0
40°	546.8	566.1	513.7	492.9	490.7	490.7
42.5°	520.5	534.3	511.6	499.7	499.7	500.4
45°	492.9	504.6	516.3	505.9	509.5	510.1
47.5°	473.4	497.0	516.3	507.4	514.3	518.4
50°	455.5	490.0	505.9	505.9	513.7	514.3
52.5°	451.4	480.5	496.4	503.9	504.6	501.2
55°	452.0	472.8	488.7	498.4	494.2	494.2
57.5°	451.4	468.6	482.5	486.0	488.0	488.0
60°	452.0	463.2	474.1	472.8	479.8	479.8
62.5°	454.2	455.5	461.1	459.7	470.1	470.1
65°	458.9	445.9	442.3	443.9	456.2	455.5
67.5°	467.9	432.8	421.7	422.4	440.3	437.6
70°	481.1	414.7	398.2	393.9	424.4	419.6
72.5°	485.3	393.9	367.8	363.6	381.6	367.8
75°	466.0	377.4	335.2	321.5	313.8	309.6
77.5°	415.5	367.0	301.4	272.4	260.6	257.9
80°	344.2	345.6	257.2	222.6	258.5	257.9
82.5°	259.9	298.6	206.0	192.9	187.3	156.2
85°	125.9	224.7	158.3	132.7	79.5	75.4
87.5°	11.0	94.1	91.3	59.5	26.9	25.6
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)