

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: P196763

Luminaire Tested: **NAV-AF-05-D-UNV-T2R-7030-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196763
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-7030-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(5) 70 CRI, 3000K, 800mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II
ROADWAY OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 24621.6 lumens
Efficiency: N/A
Efficacy: 117.2 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): 210
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

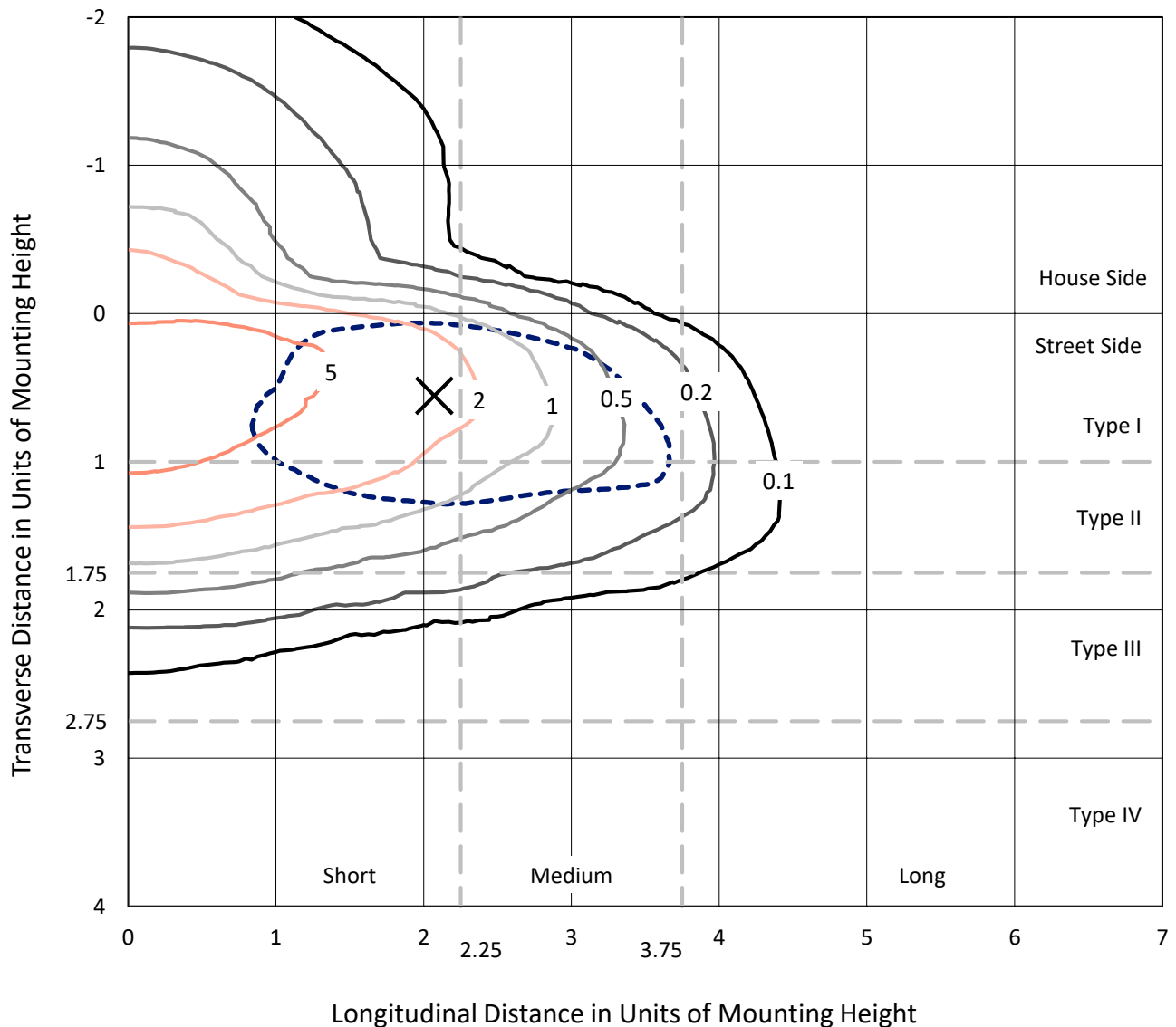


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Iso-Footcandle Lines of Horizontal Illumination

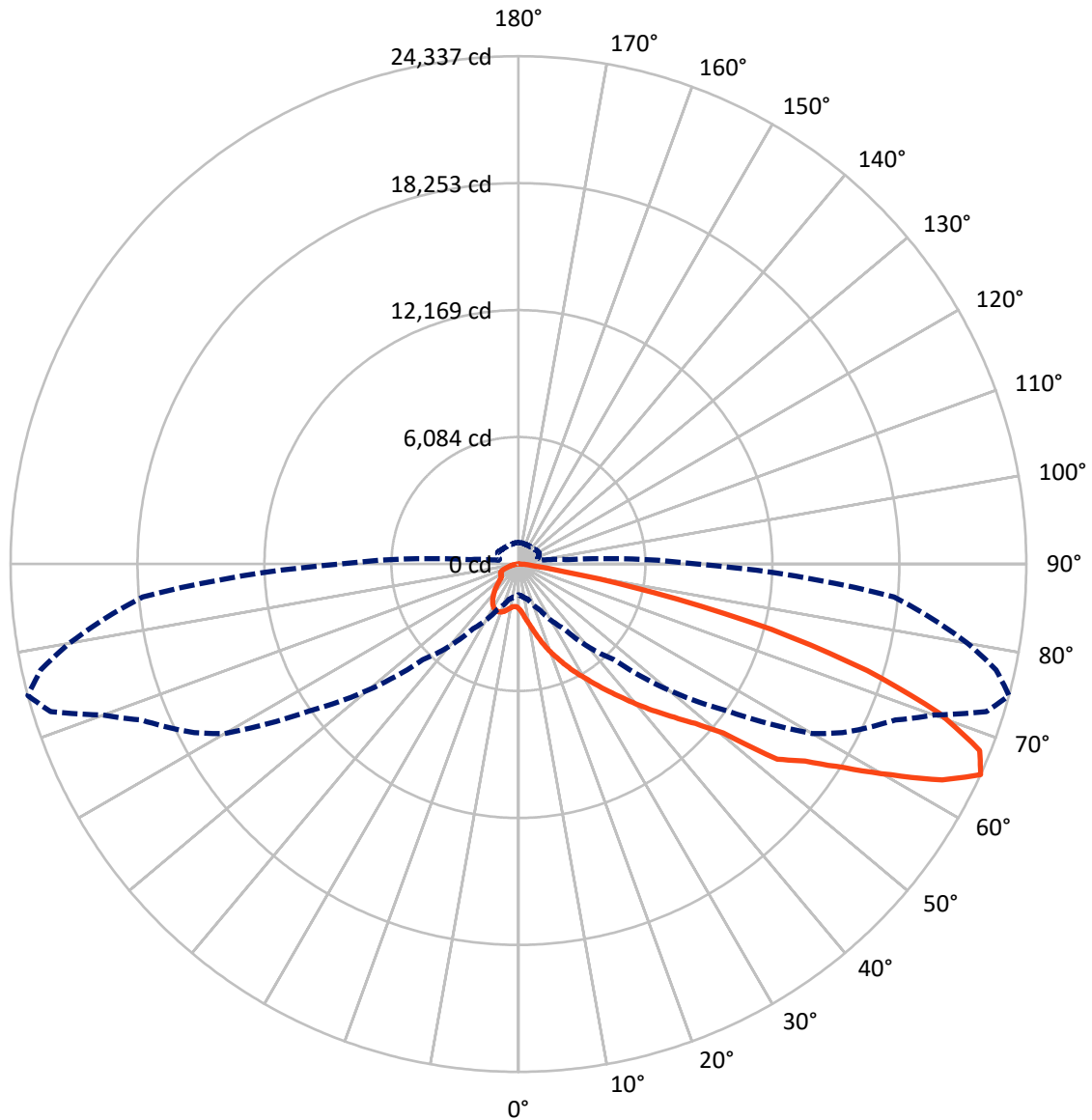
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 9.8 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	3699.8	0.0	3699.8
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	20921.8	0.0	20921.8
	% Fixture	85.0	0.0	85.0
Total	Lumens	24621.6	0.0	24621.6
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	251.8	1.0
10°-20°	962.0	3.9
20°-30°	1941.3	7.9
30°-40°	3296.9	13.4
40°-50°	4598.4	18.7
50°-60°	5635.9	22.9
60°-70°	5302.6	21.5
70°-80°	2325.1	9.4
80°-90°	307.7	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°	24621.6	100.0
0°-180°	24621.6	100.0



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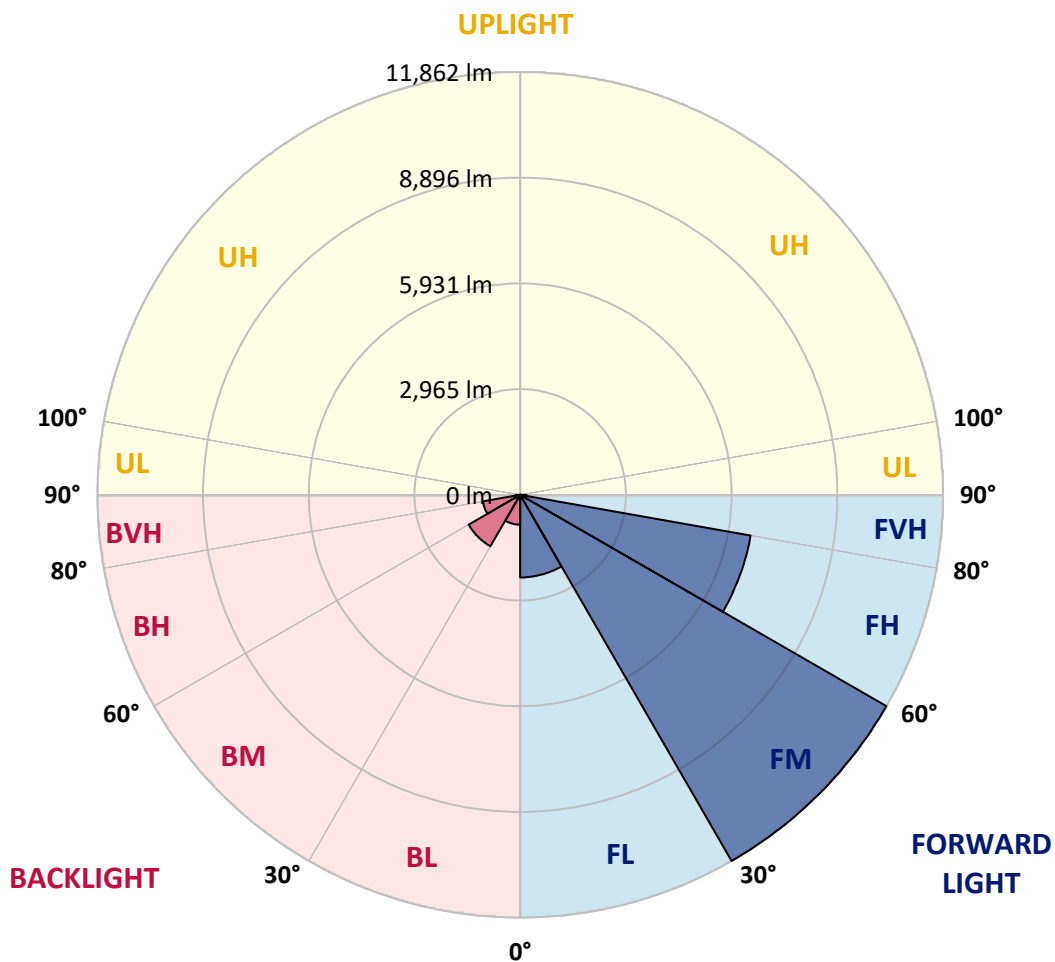
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	2317.6	9.4			
FM (30°-60°)	11861.6	48.2			
FH (60°-80°)	6564.3	26.7			G3/7500
FVH (80°-90°)	178.3	0.7			G2/225
BL (0°-30°)	837.5	3.4	B2/1000		
BM (30°-60°)	1669.5	6.8	B2/2500		
BH (60°-80°)	1063.4	4.3	B3/2500		G3/2500
BVH (80°-90°)	129.3	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





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	57.5°	60°	62.5°	65°
0°	2133.3	2133.3	2133.3	2133.3	2133.3	2133.3	2133.3	2133.3	2133.3	2133.3	2133.3
2.5°	2686.2	2654.9	2658.1	2614.1	2549.9	2479.4	2421.5	2390.1	2363.6	2355.7	2311.8
5°	3513.2	3474.1	3460.0	3359.7	3209.4	3030.9	2853.9	2784.9	2728.5	2694.0	2609.4
7.5°	4189.9	4169.6	4150.8	4058.3	3909.6	3680.8	3395.8	3293.9	3199.9	3096.6	2994.8
10°	4650.4	4642.5	4634.7	4570.6	4446.8	4247.8	3940.9	3829.6	3712.2	3580.5	3447.4
12.5°	4998.1	4998.1	5004.4	4951.1	4875.9	4722.4	4443.6	4340.3	4221.2	4083.3	3931.4
15°	5231.5	5237.8	5270.6	5286.3	5247.1	5148.4	4904.1	4813.3	4700.5	4564.2	4413.8
17.5°	5386.5	5399.0	5447.6	5499.3	5549.4	5515.0	5333.3	5248.7	5146.8	5021.5	4880.6
20°	5746.8	5731.0	5732.8	5717.0	5790.6	5817.3	5717.0	5646.5	5565.1	5450.7	5322.3
22.5°	6503.3	6473.5	6396.8	6201.0	6111.8	6102.3	6042.8	6005.2	5942.6	5870.5	5742.1
25°	7490.0	7455.7	7303.7	6981.0	6714.7	6468.8	6359.2	6335.7	6295.0	6246.5	6154.0
27.5°	8509.7	8472.2	8276.4	7869.1	7521.4	7025.0	6683.4	6652.1	6614.5	6594.2	6550.3
30°	9407.2	9366.5	9173.9	8760.3	8340.7	7748.5	7120.4	7010.8	6946.6	6952.8	6927.8
32.5°	10195.1	10159.0	9942.9	9521.6	9095.5	8520.7	7687.5	7516.7	7372.6	7319.4	7338.2
35°	10856.1	10823.2	10586.6	10162.2	9733.1	9255.4	8417.4	8160.5	7925.5	7778.2	7761.0
37.5°	11244.5	11225.8	11059.7	10699.4	10273.4	9922.6	9234.9	8949.9	8603.7	8389.2	8295.2
40°	11222.6	11243.0	11214.7	11051.9	10721.4	10466.1	10087.1	9805.0	9466.8	9147.1	8956.1
42.5°	10903.1	10931.3	11058.1	11142.7	11053.4	10898.4	10831.0	10621.1	10317.3	9978.9	9714.2
45°	10464.6	10489.6	10654.0	10959.5	11214.7	11258.6	11482.6	11377.6	11120.7	10832.6	10541.3
47.5°	9792.6	9841.1	10032.1	10517.8	11125.5	11548.3	12029.2	12077.7	11929.0	11691.0	11418.3
50°	8819.9	8884.1	9151.9	9842.6	10787.1	11846.0	12842.2	13027.0	12967.4	12726.2	12450.5
52.5°	7823.7	7887.9	8245.0	8979.6	10242.1	11968.1	13642.5	14115.5	14456.9	14706.1	14754.6
55°	6786.8	6858.9	7250.5	8096.2	9515.3	11813.1	14214.2	14751.4	15097.7	15357.6	15462.6
57.5°	5616.8	5698.2	6077.2	6932.5	8487.8	11189.7	14850.2	15611.4	16126.6	16527.6	16753.2
60°	4274.4	4376.3	4769.3	5630.9	7137.7	9996.1	15133.6	16259.9	17079.0	17680.5	18037.6
62.5°	2709.7	2813.1	3221.8	4116.3	5601.0	8365.7	14331.6	15974.8	17371.9	18261.6	18916.3
65°	1478.6	1524.0	1751.1	2424.7	3776.3	6490.8	12298.7	14236.2	16248.8	17509.8	18515.3
67.5°	1109.0	1115.2	1138.7	1303.1	2011.1	4382.5	9615.6	11390.2	13625.2	15248.0	16449.3
70°	971.1	971.1	974.3	975.8	1091.7	2374.5	6514.2	8147.9	10196.6	11838.1	13330.8
72.5°	870.9	861.5	858.3	839.5	855.2	1217.0	3546.1	5013.8	6741.4	8583.4	9975.8
75°	751.8	750.3	750.3	731.5	740.9	856.8	1538.2	2405.9	3745.1	5460.1	6830.7
77.5°	650.0	639.0	640.6	629.7	659.4	656.3	729.9	991.4	1630.4	2867.9	4005.0
80°	535.7	527.8	532.5	526.3	573.3	485.5	491.7	606.2	809.8	1257.8	1773.1
82.5°	396.3	399.5	429.2	426.0	482.4	327.3	360.2	452.7	545.1	626.5	681.3
85°	231.8	236.5	308.5	324.2	354.0	172.3	220.8	269.5	303.8	336.7	350.8
87.5°	25.0	32.9	172.3	177.0	158.2	51.7	89.3	112.7	120.6	128.5	112.7
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°	2133.3	2133.3	2133.3	2133.3	2133.3	2133.3	2133.3	2133.3	2133.3	2133.3	2133.3
2.5°	2297.7	2277.4	2255.4	2243.0	2221.0	2202.2	2167.8	2139.7	2108.2	2086.3	2076.9
5°	2567.1	2518.7	2467.0	2429.4	2382.4	2341.7	2263.3	2169.4	2139.7	2076.9	2061.2
7.5°	2918.0	2830.4	2742.6	2670.6	2589.1	2521.7	2390.1	2221.0	2199.1	2098.9	2076.9
10°	3330.0	3201.6	3071.5	2960.3	2841.3	2737.9	2543.7	2305.6	2282.1	2153.7	2131.7
12.5°	3790.4	3633.9	3466.2	3300.1	3159.2	3013.6	2748.9	2437.1	2399.6	2247.7	2217.9
15°	4265.1	4095.9	3901.6	3701.1	3527.3	3334.7	3001.1	2609.4	2540.5	2361.9	2321.2
17.5°	4733.3	4550.1	4346.6	4122.6	3918.9	3688.7	3273.6	2802.2	2683.1	2474.7	2423.1
20°	5186.0	4999.6	4785.1	4565.8	4312.0	4048.9	3552.3	2991.6	2809.9	2568.8	2501.4
22.5°	5598.0	5438.2	5223.5	4971.4	4714.5	4418.6	3835.9	3181.2	2921.1	2640.8	2554.6
25°	6031.8	5886.2	5673.2	5430.4	5131.3	4802.3	4128.8	3361.3	3010.4	2679.9	2573.5
27.5°	6470.5	6345.1	6144.6	5889.3	5568.2	5203.3	4426.4	3527.3	3082.5	2692.4	2564.1
30°	6938.7	6841.6	6656.8	6371.8	6047.5	5643.3	4750.6	3690.2	3127.9	2675.2	2521.7
32.5°	7382.0	7378.9	7214.4	6918.4	6569.1	6124.3	5092.0	3854.6	3151.4	2626.7	2448.2
35°	7842.5	7906.8	7783.0	7501.0	7133.0	6639.5	5469.5	4030.1	3153.0	2540.5	2352.6
37.5°	8365.7	8479.9	8425.2	8157.3	7770.4	7227.0	5912.8	4227.5	3143.6	2421.5	2213.1
40°	8960.8	9117.4	9115.9	8890.3	8476.9	7884.8	6428.2	4448.3	3121.6	2272.7	2048.7
42.5°	9642.1	9828.5	9880.2	9657.9	9239.6	8603.7	7018.6	4691.0	3087.2	2125.5	1874.9
45°	10422.2	10586.6	10683.8	10477.0	10057.2	9386.9	7696.9	4966.7	3044.9	1936.0	1675.9
47.5°	11257.1	11448.0	11593.8	11416.8	10968.9	10279.6	8500.4	5322.3	3029.2	1719.8	1461.4
50°	12292.3	12489.8	12804.5	12724.7	12478.7	11924.3	10199.8	6161.9	3035.5	1514.7	1281.3
52.5°	14861.1	15313.8	15711.6	15534.6	14950.4	13999.6	11581.3	6628.6	2903.9	1347.0	1156.0
55°	15636.4	16150.1	16737.5	16663.9	16103.1	15144.7	12673.0	7018.6	2777.1	1224.9	1074.4
57.5°	16992.9	17599.1	18419.8	18404.0	17716.5	16637.4	14077.9	7485.4	2722.2	1154.4	1033.8
60°	18429.2	19201.3	20335.4	20512.4	19765.2	18642.2	15738.2	8058.6	2730.1	1115.2	1010.3
62.5°	19478.6	20611.0	22260.4	22789.8	21909.5	20672.1	17461.2	8631.9	2683.1	1069.7	982.0
65°	19542.7	21173.4	23513.3	24337.3	23446.1	21856.2	18068.9	8519.2	2401.2	1008.7	936.7
67.5°	17976.5	20100.4	22943.3	23847.0	22935.3	21126.4	17003.8	7447.7	1951.6	902.2	858.3
70°	14972.4	17437.7	20388.7	21395.7	20642.4	18811.3	14798.5	5948.8	1458.3	761.2	740.9
72.5°	11570.3	13869.6	16549.6	17481.6	16905.1	15294.9	11672.1	4335.5	1041.6	617.1	601.5
75°	8271.7	10229.5	12174.9	12530.4	11961.9	10483.3	7573.1	2708.1	729.9	505.9	484.0
77.5°	5121.8	6395.3	7093.7	6636.4	5911.3	4913.5	3082.5	1337.7	485.5	411.9	390.0
80°	2272.7	2667.4	2490.4	2219.5	1752.7	1441.0	941.4	593.6	313.2	318.0	305.4
82.5°	764.4	808.2	786.3	781.6	704.8	617.1	399.5	256.9	175.5	203.7	199.0
85°	372.8	390.0	391.5	405.7	352.5	274.1	108.0	101.8	75.2	109.6	114.4
87.5°	112.7	114.4	103.4	112.7	90.8	62.6	20.3	28.2	14.1	26.7	26.7
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°	2133.3	2133.3	2133.3	2133.3	2133.3	2133.3	2133.3	2133.3	2133.3	2133.3	2133.3
2.5°	2059.6	2053.4	2042.5	2029.9	2026.8	2011.1	2006.4	1998.6	1993.9	1986.2	1979.8
5°	2040.9	2029.9	2017.4	2003.3	2003.3	1981.4	1972.0	1962.7	1962.7	1948.5	1942.2
7.5°	2059.6	2045.6	2031.4	2019.0	2023.7	1998.6	1989.2	1979.8	1978.2	1964.2	1957.9
10°	2113.0	2098.9	2081.6	2069.1	2064.4	2044.0	2033.1	2019.0	2009.6	2000.2	1990.8
12.5°	2194.4	2175.6	2153.7	2127.1	2116.2	2098.9	2081.6	2062.9	2040.9	2031.4	2017.4
15°	2291.5	2260.1	2230.4	2197.5	2167.8	2150.5	2127.1	2097.2	2067.5	2054.9	2036.1
17.5°	2371.4	2338.4	2296.2	2257.1	2203.8	2189.7	2156.8	2120.8	2072.2	2067.5	2039.4
20°	2438.7	2388.6	2336.9	2290.0	2208.4	2200.7	2159.9	2117.7	2048.7	2048.7	2014.3
22.5°	2476.4	2407.4	2346.4	2283.6	2181.9	2175.6	2128.6	2078.4	1993.9	1997.0	1954.7
25°	2482.6	2399.6	2322.9	2247.7	2130.2	2119.2	2059.6	2004.9	1912.5	1906.2	1862.4
27.5°	2457.6	2360.4	2271.2	2180.3	2053.4	2029.9	1964.2	1898.4	1807.4	1791.9	1744.9
30°	2399.6	2285.2	2184.9	2080.1	1946.9	1909.3	1840.4	1773.1	1680.6	1660.3	1616.4
32.5°	2307.1	2177.2	2066.0	1960.9	1813.8	1766.8	1697.9	1630.4	1541.2	1525.6	1484.9
35°	2184.9	2039.4	1921.9	1810.7	1663.4	1614.9	1549.1	1489.5	1408.2	1401.8	1373.6
37.5°	2031.4	1879.6	1754.2	1647.7	1508.4	1483.3	1415.9	1372.1	1304.8	1311.0	1296.9
40°	1857.6	1702.6	1583.5	1489.5	1368.9	1347.0	1306.3	1273.4	1215.4	1232.7	1234.3
42.5°	1682.3	1527.1	1419.1	1334.5	1231.2	1217.0	1188.8	1170.0	1126.1	1160.7	1174.7
45°	1483.3	1339.2	1246.7	1182.5	1105.8	1105.8	1091.7	1090.2	1060.4	1109.0	1123.0
47.5°	1290.7	1177.9	1113.7	1074.4	1021.2	1046.2	1041.6	1054.2	1032.2	1082.3	1094.9
50°	1144.9	1066.7	1027.5	1008.7	971.1	1010.3	1019.7	1036.9	1018.1	1062.0	1071.4
52.5°	1052.6	1001.0	979.0	974.3	947.6	996.1	1011.8	1027.5	1005.6	1046.2	1044.7
55°	1001.0	966.4	958.5	967.9	947.6	994.6	1010.3	1021.2	1002.5	1030.7	1029.1
57.5°	982.0	963.2	967.9	982.0	967.9	1007.2	1015.0	1027.5	1008.7	1021.2	1027.5
60°	980.5	980.5	999.2	1018.1	1008.7	1036.9	1041.6	1040.0	1022.7	1024.5	1027.5
62.5°	971.1	994.6	1026.0	1055.7	1052.6	1087.0	1090.2	1069.7	1055.7	1040.0	1035.3
65°	941.4	980.5	1026.0	1066.7	1072.9	1126.1	1132.5	1112.0	1102.7	1076.1	1055.7
67.5°	875.6	925.7	979.0	1029.1	1040.0	1112.0	1126.1	1134.0	1138.7	1121.4	1094.9
70°	764.4	816.0	870.9	928.8	944.4	1024.5	1054.2	1090.2	1118.4	1143.4	1134.0
72.5°	621.8	668.7	715.7	769.0	792.5	875.6	914.7	977.4	1021.2	1085.5	1112.0
75°	493.5	521.6	549.8	582.7	601.5	682.9	731.5	806.7	866.2	955.5	1015.0
77.5°	388.4	402.5	416.6	430.7	438.5	484.0	523.2	598.3	667.2	780.0	867.7
80°	299.2	307.0	308.5	313.2	310.1	332.0	346.2	391.5	451.1	562.3	665.7
82.5°	192.7	199.0	202.0	209.9	194.3	222.5	231.8	236.5	267.8	349.3	423.0
85°	108.0	109.6	111.2	114.4	92.5	120.6	122.2	114.4	111.2	144.1	162.9
87.5°	26.7	25.0	26.7	26.7	10.9	25.0	25.0	17.3	12.6	23.5	18.8
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):

	135°	145°	155°	165°	175°	180°
0°	2133.3	2133.3	2133.3	2133.3	2133.3	2133.3
2.5°	1965.7	1962.7	1964.2	1956.3	1953.2	1954.7
5°	1934.4	1928.1	1928.1	1923.4	1917.2	1917.2
7.5°	1948.5	1936.0	1931.2	1921.9	1912.5	1914.0
10°	1970.4	1948.5	1932.8	1918.7	1907.7	1907.7
12.5°	1984.4	1945.4	1921.9	1903.1	1890.5	1890.5
15°	1987.7	1928.1	1893.7	1873.2	1860.8	1860.8
17.5°	1968.9	1893.7	1849.8	1823.2	1809.2	1812.2
20°	1921.9	1829.4	1777.7	1749.6	1735.5	1737.0
22.5°	1848.2	1741.7	1682.3	1649.3	1635.2	1635.2
25°	1748.0	1632.2	1567.9	1541.2	1528.7	1528.7
27.5°	1633.7	1514.7	1458.3	1437.9	1429.9	1429.9
30°	1505.3	1406.5	1365.8	1351.7	1339.2	1339.2
32.5°	1397.1	1326.6	1312.5	1293.7	1260.9	1259.3
35°	1311.0	1303.1	1292.2	1235.8	1188.8	1182.5
37.5°	1264.0	1311.0	1242.1	1144.9	1107.4	1105.8
40°	1239.0	1282.8	1163.7	1116.7	1112.0	1112.0
42.5°	1179.5	1210.7	1159.0	1132.5	1132.5	1134.0
45°	1116.7	1143.4	1170.0	1146.5	1154.4	1156.0
47.5°	1072.9	1126.1	1170.0	1149.6	1165.4	1174.7
50°	1032.2	1110.5	1146.5	1146.5	1163.7	1165.4
52.5°	1022.7	1088.5	1124.6	1141.9	1143.4	1135.5
55°	1024.5	1071.4	1107.4	1129.3	1119.9	1119.9
57.5°	1022.7	1062.0	1093.2	1101.2	1105.8	1105.8
60°	1024.5	1049.4	1074.4	1071.4	1087.0	1087.0
62.5°	1029.1	1032.2	1044.7	1041.6	1065.1	1065.1
65°	1040.0	1010.3	1002.5	1005.6	1033.8	1032.2
67.5°	1060.4	980.5	955.5	957.0	997.7	991.4
70°	1090.2	939.7	902.2	892.7	961.7	950.8
72.5°	1099.5	892.7	833.3	824.0	864.6	833.3
75°	1055.7	855.2	759.7	728.3	711.1	701.7
77.5°	941.4	831.7	682.9	617.1	590.5	584.2
80°	780.0	783.2	582.7	504.3	585.8	584.2
82.5°	588.9	676.7	466.7	437.0	424.5	354.0
85°	285.0	509.0	358.7	300.7	180.2	170.8
87.5°	25.0	213.0	206.7	134.7	61.0	57.9
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)