

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: P197244

Luminaire Tested: **NAV-AF-06-D-UNV-T2R-8030-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P197244
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-06-D-UNV-T2R-8030-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(6) 80 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: 24887 lumens
Efficiency: N/A
Efficacy: 99.9 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): 249
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

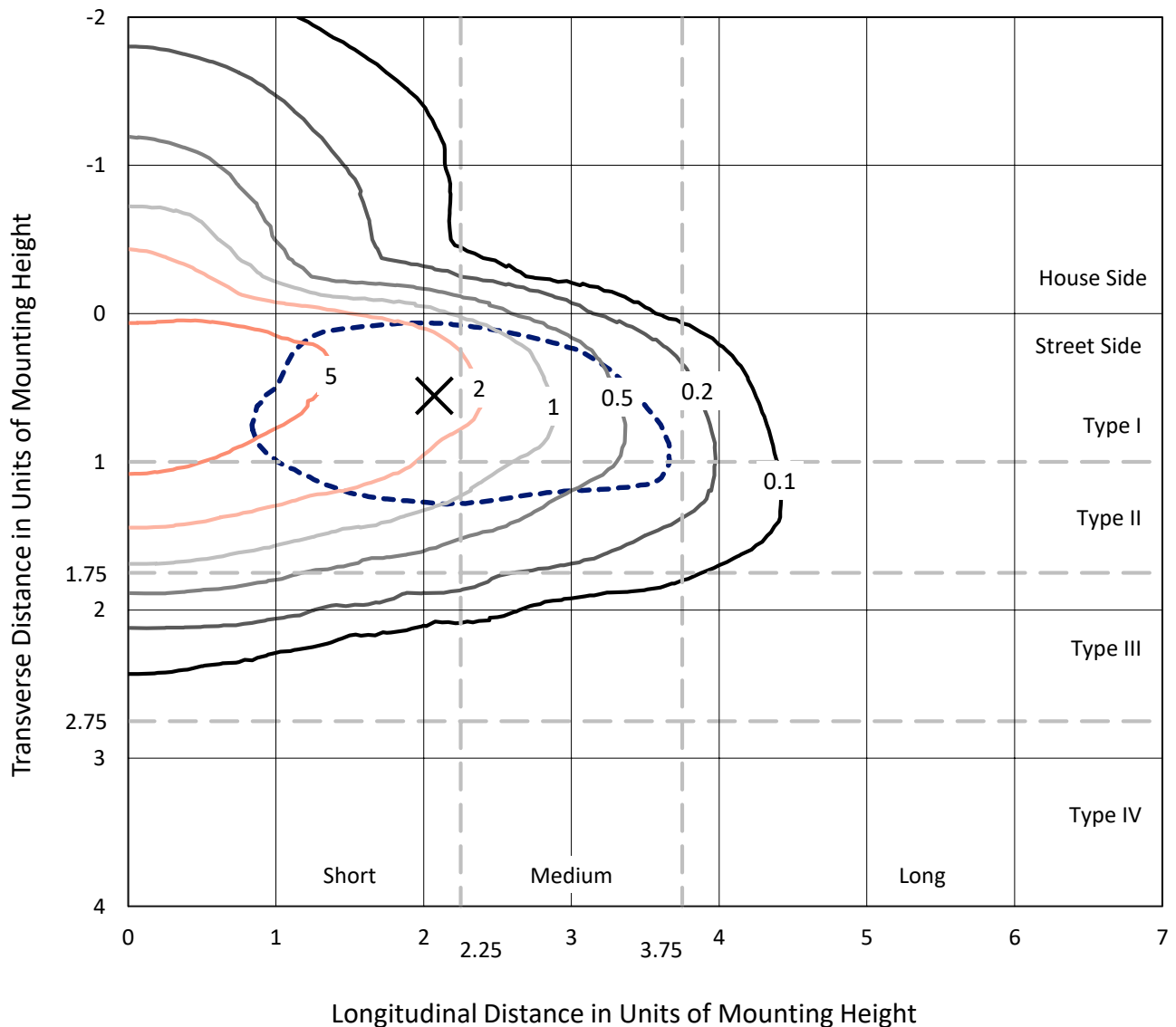


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Iso-Footcandle Lines of Horizontal Illumination

× Max cd
 - - - 1/2 Max cd

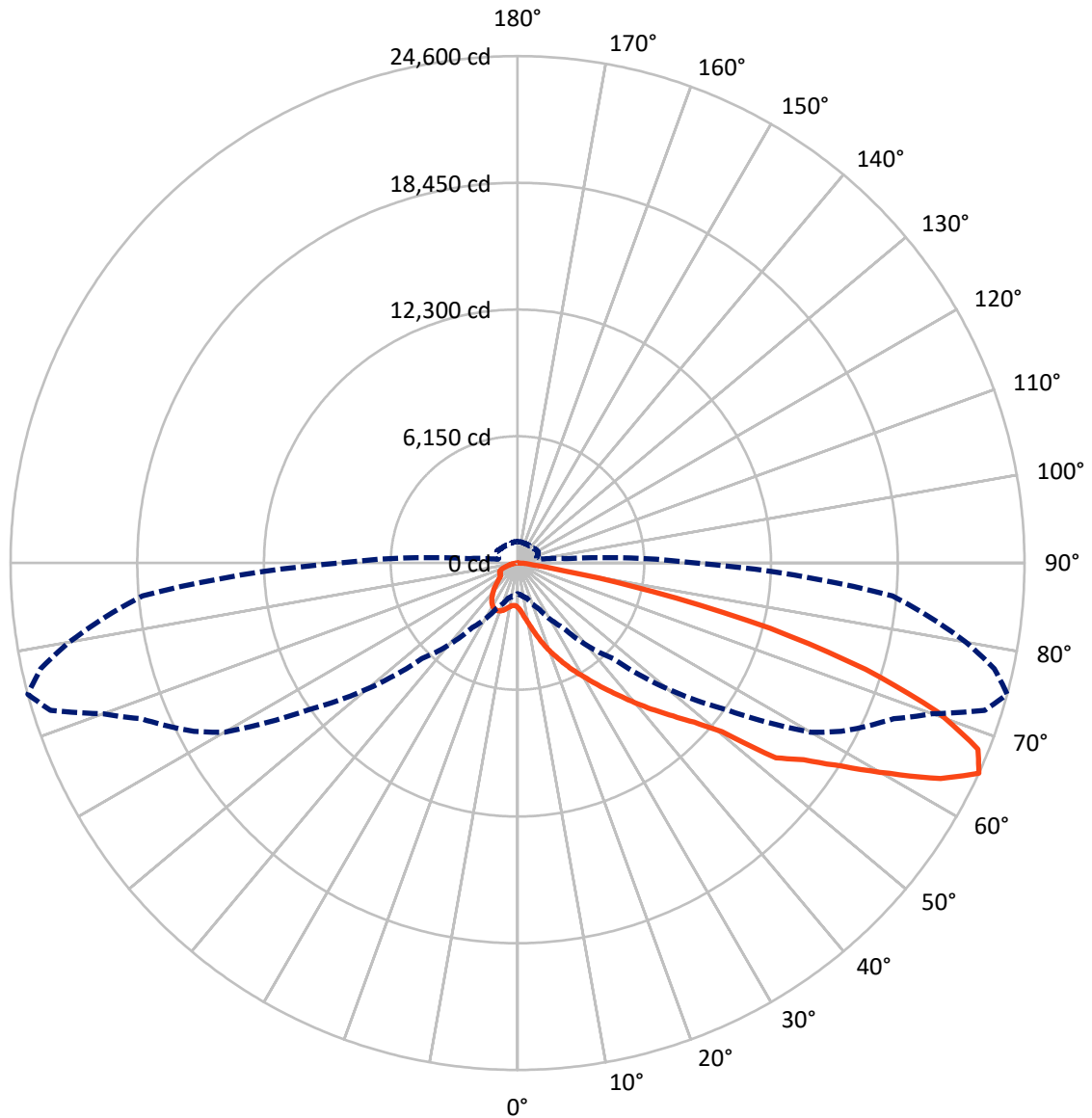


Based on 25 foot mounting height. Maximum calculated value = 9.9 fc
 Type II - Short - Semi-Cutoff

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Luminous Intensity Polar Plot



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

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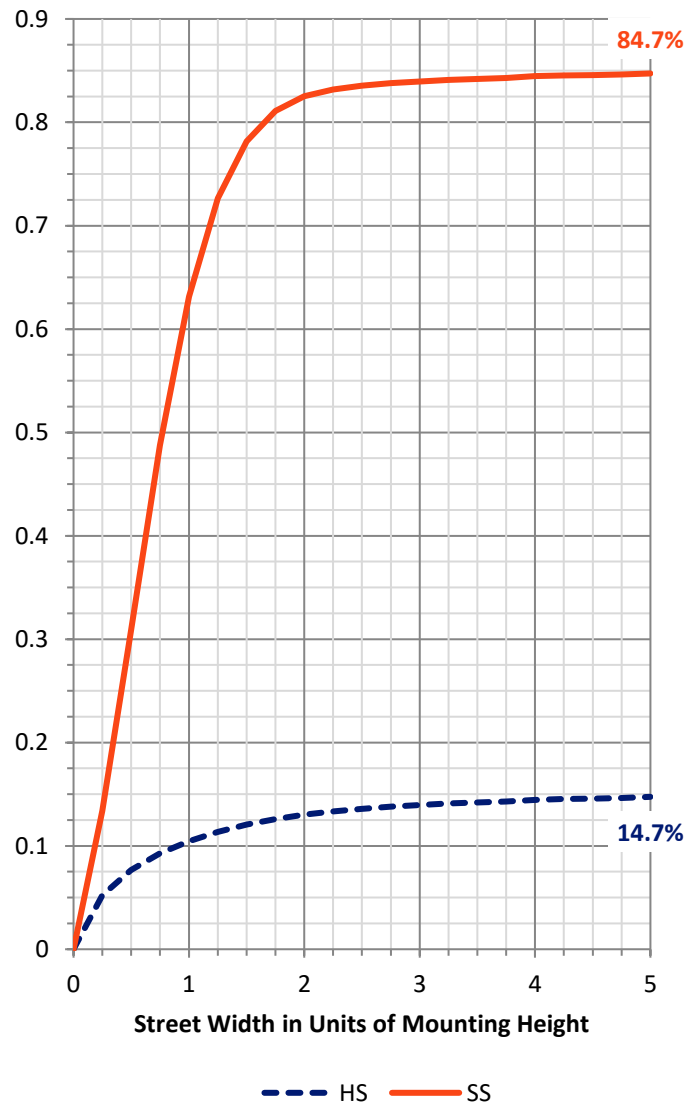
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	3739.6	0.0	3739.6
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	21147.3	0.0	21147.3
	% Fixture	85.0	0.0	85.0
Total	Lumens	24887.0	0.0	24887.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	254.6	1.0
10°-20°	972.3	3.9
20°-30°	1962.2	7.9
30°-40°	3332.4	13.4
40°-50°	4647.9	18.7
50°-60°	5696.6	22.9
60°-70°	5359.7	21.5
70°-80°	2350.2	9.4
80°-90°	311.0	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°	24887.0	100.0
0°-180°	24887.0	100.0

Coefficient of Utilization



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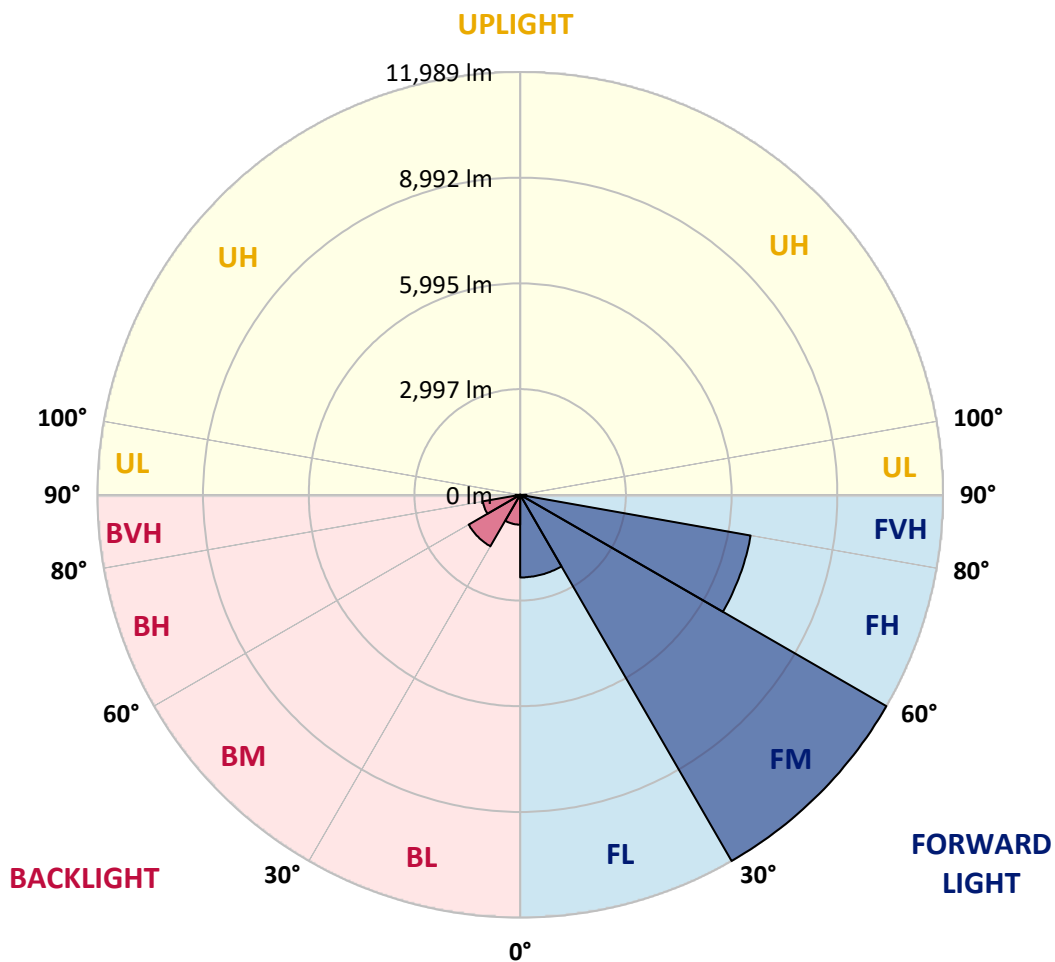
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	2342.5	9.4			
FM (30°-60°)	11989.4	48.2			
FH (60°-80°)	6635.1	26.7			G3/7500
FVH (80°-90°)	180.3	0.7			G2/225
BL (0°-30°)	846.6	3.4	B2/1000		
BM (30°-60°)	1687.5	6.8	B2/2500		
BH (60°-80°)	1074.8	4.3	B3/2500		G3/2500
BVH (80°-90°)	130.7	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°	2156.3	2156.3	2156.3	2156.3	2156.3	2156.3	2156.3	2156.3	2156.3	2156.3	2156.3
2.5°	2715.2	2683.5	2686.7	2642.3	2577.4	2506.2	2447.6	2415.9	2389.0	2381.1	2336.8
5°	3551.1	3511.5	3497.3	3395.9	3244.0	3063.5	2884.6	2814.9	2757.9	2723.1	2637.6
7.5°	4235.0	4214.5	4195.5	4102.0	3951.6	3720.5	3432.4	3329.5	3234.5	3130.0	3027.1
10°	4700.5	4692.6	4684.7	4619.8	4494.7	4293.6	3983.3	3870.9	3752.2	3619.2	3484.6
12.5°	5052.0	5052.0	5058.3	5004.5	4928.5	4773.3	4491.5	4387.0	4266.7	4127.4	3973.8
15°	5287.9	5294.2	5327.4	5343.3	5303.7	5203.9	4957.0	4865.1	4751.2	4613.4	4461.4
17.5°	5444.6	5457.3	5506.3	5558.6	5609.2	5574.4	5390.8	5305.3	5202.4	5075.7	4933.2
20°	5808.7	5792.9	5794.5	5778.6	5853.1	5880.0	5778.6	5707.4	5625.1	5509.5	5379.7
22.5°	6573.4	6543.3	6465.8	6267.9	6177.6	6168.1	6108.0	6070.0	6006.6	5933.8	5804.0
25°	7570.8	7536.0	7382.4	7056.3	6787.1	6538.6	6427.8	6404.0	6362.8	6313.8	6220.4
27.5°	8601.5	8563.5	8365.6	7954.0	7602.5	7100.6	6755.5	6723.8	6685.8	6665.2	6620.9
30°	9508.6	9467.5	9272.8	8854.8	8430.5	7832.0	7197.2	7086.4	7021.5	7027.8	7002.5
32.5°	10305.0	10268.6	10050.1	9624.2	9193.6	8612.6	7770.3	7597.7	7452.1	7398.3	7417.3
35°	10973.1	10939.9	10700.8	10271.7	9837.9	9355.1	8508.1	8248.4	8010.9	7862.1	7844.7
37.5°	11365.7	11346.7	11178.9	10814.8	10384.2	10029.5	9334.5	9046.4	8696.5	8479.6	8384.6
40°	11343.6	11364.1	11335.6	11171.0	10836.9	10578.9	10195.8	9910.8	9568.8	9245.8	9052.7
42.5°	11020.6	11049.1	11177.3	11262.8	11172.6	11015.8	10947.8	10735.6	10428.5	10086.5	9819.0
45°	10577.3	10602.6	10768.9	11077.6	11335.6	11380.0	11606.4	11500.3	11240.7	10949.3	10654.9
47.5°	9898.1	9947.2	10140.3	10631.1	11245.4	11672.9	12158.9	12208.0	12057.6	11816.9	11541.5
50°	8914.9	8979.9	9250.6	9948.8	10903.4	11973.7	12980.6	13167.4	13107.2	12863.4	12584.8
52.5°	7908.0	7973.0	8333.9	9076.4	10352.5	12097.2	13789.6	14267.7	14612.9	14864.6	14913.7
55°	6860.0	6932.8	7328.6	8183.5	9617.9	11940.4	14367.5	14910.5	15260.4	15523.2	15629.3
57.5°	5677.3	5759.6	6142.8	7007.2	8579.3	11310.3	15010.2	15779.7	16300.5	16705.8	16933.8
60°	4320.5	4423.4	4820.8	5691.6	7214.6	10103.9	15296.8	16435.1	17263.1	17871.1	18232.0
62.5°	2738.9	2843.4	3256.6	4160.6	5661.5	8455.8	14486.2	16147.0	17559.2	18458.4	19120.2
65°	1494.5	1540.4	1770.0	2450.8	3817.1	6560.7	12431.2	14389.6	16424.0	17698.5	18714.9
67.5°	1120.9	1127.2	1151.0	1317.2	2032.8	4429.8	9719.2	11513.0	13772.2	15412.4	16626.7
70°	981.6	981.6	984.7	986.3	1103.5	2400.1	6584.5	8235.8	10306.6	11965.8	13474.5
72.5°	880.3	870.8	867.6	848.6	864.4	1230.1	3584.3	5067.8	6814.1	8675.9	10083.3
75°	759.9	758.3	758.3	739.4	748.8	866.0	1554.7	2431.8	3785.4	5519.0	6904.3
77.5°	657.0	645.9	647.5	636.4	666.5	663.4	737.8	1002.2	1648.1	2898.8	4048.2
80°	541.5	533.5	538.3	532.0	579.4	490.8	497.1	612.7	818.5	1271.3	1792.2
82.5°	400.5	403.7	433.8	430.6	487.6	330.9	364.1	457.5	551.0	633.3	688.7
85°	234.3	239.1	311.9	327.7	357.8	174.2	223.2	272.3	307.1	340.4	354.6
87.5°	25.3	33.2	174.2	178.9	159.9	52.2	90.2	114.0	121.9	129.8	114.0
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°	2156.3	2156.3	2156.3	2156.3	2156.3	2156.3	2156.3	2156.3	2156.3	2156.3	2156.3
2.5°	2322.5	2302.0	2279.8	2267.1	2245.0	2226.0	2191.1	2162.6	2131.0	2108.8	2099.3
5°	2594.9	2545.8	2493.5	2455.5	2408.0	2366.9	2287.7	2192.7	2162.6	2099.3	2083.5
7.5°	2949.5	2860.8	2772.2	2699.3	2617.0	2548.9	2415.9	2245.0	2222.8	2121.5	2099.3
10°	3365.9	3236.0	3104.6	2992.2	2871.9	2767.4	2571.1	2330.5	2306.7	2176.9	2154.7
12.5°	3831.3	3673.0	3503.6	3335.8	3193.3	3046.1	2778.5	2463.4	2425.4	2271.9	2241.8
15°	4311.0	4140.0	3943.7	3741.1	3565.3	3370.6	3033.4	2637.6	2567.9	2387.5	2346.3
17.5°	4784.4	4599.2	4393.4	4167.0	3961.1	3728.4	3308.9	2832.3	2712.0	2501.4	2449.2
20°	5241.9	5053.5	4836.6	4615.0	4358.5	4092.5	3590.7	3023.9	2840.2	2596.4	2528.4
22.5°	5658.3	5496.8	5279.9	5025.0	4765.4	4466.2	3877.2	3215.5	2952.7	2669.3	2582.2
25°	6096.9	5949.6	5734.3	5488.9	5186.5	4854.1	4173.3	3397.5	3042.9	2708.8	2601.2
27.5°	6540.2	6413.5	6210.9	5952.8	5628.2	5259.4	4474.1	3565.3	3115.7	2721.5	2591.7
30°	7013.5	6915.4	6728.6	6440.4	6112.7	5704.2	4801.8	3730.0	3161.6	2704.1	2548.9
32.5°	7461.6	7458.4	7292.2	6993.0	6639.9	6190.3	5147.0	3896.2	3185.4	2655.0	2474.5
35°	7927.0	7991.9	7866.9	7581.9	7209.9	6711.1	5528.5	4073.6	3187.0	2567.9	2378.0
37.5°	8455.8	8571.4	8516.0	8245.3	7854.2	7304.8	5976.5	4273.0	3177.5	2447.6	2237.0
40°	9057.4	9215.8	9214.2	8986.2	8568.2	7969.8	6497.4	4496.3	3155.3	2297.2	2070.8
42.5°	9746.1	9934.5	9986.8	9762.0	9339.2	8696.5	7094.3	4741.7	3120.5	2148.4	1895.1
45°	10534.6	10700.8	10798.9	10590.0	10165.7	9488.1	7779.8	5020.3	3077.7	1956.8	1694.0
47.5°	11378.4	11571.5	11718.8	11539.9	11087.1	10390.5	8592.0	5379.7	3061.9	1738.3	1477.1
50°	12424.9	12624.4	12942.6	12861.8	12613.3	12052.8	10309.7	6228.3	3068.2	1530.9	1295.1
52.5°	15021.3	15478.9	15881.0	15702.1	15111.6	14150.6	11706.1	6700.1	2935.2	1361.5	1168.4
55°	15805.0	16324.3	16918.0	16843.6	16276.8	15307.9	12809.6	7094.3	2807.0	1238.1	1086.1
57.5°	17176.0	17788.7	18618.3	18602.5	17907.5	16816.7	14229.7	7566.1	2751.6	1166.8	1044.9
60°	18627.8	19408.3	20554.6	20733.5	19978.3	18843.1	15907.9	8145.5	2759.5	1127.2	1021.2
62.5°	19688.6	20833.2	22500.3	23035.4	22145.7	20895.0	17649.4	8725.0	2712.0	1081.3	992.7
65°	19753.5	21401.6	23766.9	24599.6	23698.8	22091.8	18263.7	8611.0	2427.0	1019.6	946.7
67.5°	18170.3	20317.1	23190.6	24104.1	23182.7	21354.1	17187.1	7528.1	1972.7	911.9	867.6
70°	15133.7	17625.7	20608.4	21626.4	20864.9	19014.1	14958.0	6013.0	1474.0	769.4	748.8
72.5°	11695.0	14019.2	16728.0	17670.0	17087.4	15459.9	11797.9	4382.3	1052.8	623.8	607.9
75°	8360.8	10339.8	12306.1	12665.5	12090.8	10596.3	7654.7	2737.3	737.8	511.4	489.2
77.5°	5177.0	6464.2	7170.3	6708.0	5975.0	4966.5	3115.7	1352.0	490.8	416.4	394.2
80°	2297.2	2696.2	2517.3	2243.4	1771.6	1456.5	951.5	600.0	316.6	321.4	308.7
82.5°	772.6	816.9	794.8	790.0	712.4	623.8	403.7	259.6	177.3	205.8	201.1
85°	376.8	394.2	395.8	410.0	356.2	277.1	109.2	102.9	76.0	110.8	115.6
87.5°	114.0	115.6	104.5	114.0	91.8	63.3	20.6	28.5	14.2	26.9	26.9
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°	2156.3	2156.3	2156.3	2156.3	2156.3	2156.3	2156.3	2156.3	2156.3	2156.3	2156.3
2.5°	2081.9	2075.6	2064.5	2051.8	2048.6	2032.8	2028.1	2020.2	2015.4	2007.5	2001.2
5°	2062.9	2051.8	2039.2	2024.9	2024.9	2002.7	1993.2	1983.7	1983.7	1969.5	1963.2
7.5°	2081.9	2067.6	2053.4	2040.7	2045.5	2020.2	2010.7	2001.2	1999.6	1985.3	1979.0
10°	2135.7	2121.5	2104.1	2091.4	2086.6	2066.1	2055.0	2040.7	2031.2	2021.7	2012.2
12.5°	2218.1	2199.1	2176.9	2150.0	2138.9	2121.5	2104.1	2085.1	2062.9	2053.4	2039.2
15°	2316.2	2284.5	2254.5	2221.2	2191.1	2173.7	2150.0	2119.9	2089.8	2077.1	2058.1
17.5°	2397.0	2363.7	2321.0	2281.4	2227.5	2213.3	2180.1	2143.6	2094.6	2089.8	2061.3
20°	2465.0	2414.4	2362.1	2314.6	2232.3	2224.4	2183.2	2140.5	2070.8	2070.8	2036.0
22.5°	2503.0	2433.4	2371.6	2308.3	2205.4	2199.1	2151.6	2100.9	2015.4	2018.6	1975.8
25°	2509.4	2425.4	2347.9	2271.9	2153.1	2142.1	2081.9	2026.5	1933.1	1926.7	1882.4
27.5°	2484.0	2385.9	2295.6	2203.8	2075.6	2051.8	1985.3	1918.8	1827.0	1811.2	1763.7
30°	2425.4	2309.9	2208.6	2102.5	1967.9	1929.9	1860.2	1792.2	1698.8	1678.2	1633.9
32.5°	2332.0	2200.6	2088.2	1982.2	1833.3	1785.8	1716.2	1648.1	1557.9	1542.0	1500.9
35°	2208.6	2061.3	1942.6	1830.2	1681.3	1632.3	1565.8	1505.6	1423.3	1417.0	1388.5
37.5°	2053.4	1899.8	1773.2	1665.5	1524.6	1499.3	1431.2	1386.9	1318.8	1325.1	1310.9
40°	1877.7	1720.9	1600.6	1505.6	1383.7	1361.5	1320.4	1287.1	1228.6	1246.0	1247.6
42.5°	1700.3	1543.6	1434.4	1348.9	1244.4	1230.1	1201.6	1182.6	1138.3	1173.1	1187.4
45°	1499.3	1353.6	1260.2	1195.3	1117.7	1117.7	1103.5	1101.9	1071.8	1120.9	1135.1
47.5°	1304.5	1190.6	1125.6	1086.1	1032.2	1057.6	1052.8	1065.5	1043.3	1094.0	1106.7
50°	1157.3	1078.2	1038.6	1019.6	981.6	1021.2	1030.7	1048.1	1029.1	1073.4	1082.9
52.5°	1063.9	1011.7	989.5	984.7	957.8	1006.9	1022.7	1038.6	1016.4	1057.6	1056.0
55°	1011.7	976.8	968.9	978.4	957.8	1005.3	1021.2	1032.2	1013.2	1041.7	1040.2
57.5°	992.7	973.7	978.4	992.7	978.4	1018.0	1025.9	1038.6	1019.6	1032.2	1038.6
60°	991.1	991.1	1010.1	1029.1	1019.6	1048.1	1052.8	1051.2	1033.8	1035.4	1038.6
62.5°	981.6	1005.3	1037.0	1067.1	1063.9	1098.7	1101.9	1081.3	1067.1	1051.2	1046.5
65°	951.5	991.1	1037.0	1078.2	1084.5	1138.3	1144.6	1124.1	1114.6	1087.7	1067.1
67.5°	885.0	935.7	989.5	1040.2	1051.2	1124.1	1138.3	1146.2	1151.0	1133.6	1106.7
70°	772.6	824.8	880.3	938.8	954.7	1035.4	1065.5	1101.9	1130.4	1155.7	1146.2
72.5°	628.5	676.0	723.5	777.3	801.1	885.0	924.6	987.9	1032.2	1097.2	1124.1
75°	498.7	527.2	555.7	588.9	607.9	690.3	739.4	815.3	875.5	965.7	1025.9
77.5°	392.6	406.9	421.1	435.4	443.3	489.2	528.8	604.8	674.4	788.4	877.1
80°	302.4	310.3	311.9	316.6	313.5	335.6	349.9	395.8	456.0	568.4	672.9
82.5°	194.7	201.1	204.2	212.1	196.3	224.8	234.3	239.1	270.7	353.1	427.5
85°	109.2	110.8	112.4	115.6	93.4	121.9	123.5	115.6	112.4	145.7	164.7
87.5°	26.9	25.3	26.9	26.9	11.1	25.3	25.3	17.4	12.7	23.7	19.0
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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	135°	145°	155°	165°	175°	180°
0°	2156.3	2156.3	2156.3	2156.3	2156.3	2156.3
2.5°	1986.9	1983.7	1985.3	1977.4	1974.2	1975.8
5°	1955.2	1948.9	1948.9	1944.2	1937.8	1937.8
7.5°	1969.5	1956.8	1952.1	1942.6	1933.1	1934.7
10°	1991.7	1969.5	1953.7	1939.4	1928.3	1928.3
12.5°	2005.9	1966.3	1942.6	1923.6	1910.9	1910.9
15°	2009.1	1948.9	1914.1	1893.5	1880.8	1880.8
17.5°	1990.1	1914.1	1869.7	1842.8	1828.6	1831.8
20°	1942.6	1849.2	1796.9	1768.4	1754.2	1755.8
22.5°	1868.2	1760.5	1700.3	1667.1	1652.9	1652.9
25°	1766.8	1649.7	1584.8	1557.9	1545.2	1545.2
27.5°	1651.3	1530.9	1474.0	1453.4	1445.5	1445.5
30°	1521.4	1421.7	1380.5	1366.3	1353.6	1353.6
32.5°	1412.2	1341.0	1326.7	1307.7	1274.5	1272.9
35°	1325.1	1317.2	1306.1	1249.1	1201.6	1195.3
37.5°	1277.6	1325.1	1255.5	1157.3	1119.3	1117.7
40°	1252.3	1296.6	1176.3	1128.8	1124.1	1124.1
42.5°	1192.1	1223.8	1171.6	1144.6	1144.6	1146.2
45°	1128.8	1155.7	1182.6	1158.9	1166.8	1168.4
47.5°	1084.5	1138.3	1182.6	1162.1	1177.9	1187.4
50°	1043.3	1122.5	1158.9	1158.9	1176.3	1177.9
52.5°	1033.8	1100.3	1136.7	1154.1	1155.7	1147.8
55°	1035.4	1082.9	1119.3	1141.5	1132.0	1132.0
57.5°	1033.8	1073.4	1105.1	1113.0	1117.7	1117.7
60°	1035.4	1060.7	1086.1	1082.9	1098.7	1098.7
62.5°	1040.2	1043.3	1056.0	1052.8	1076.6	1076.6
65°	1051.2	1021.2	1013.2	1016.4	1044.9	1043.3
67.5°	1071.8	991.1	965.7	967.3	1008.5	1002.2
70°	1101.9	949.9	911.9	902.4	972.1	961.0
72.5°	1111.4	902.4	842.3	832.8	873.9	842.3
75°	1067.1	864.4	767.8	736.2	718.8	709.3
77.5°	951.5	840.7	690.3	623.8	596.9	590.5
80°	788.4	791.6	588.9	509.8	592.1	590.5
82.5°	595.3	683.9	471.8	441.7	429.0	357.8
85°	288.1	514.5	362.6	304.0	182.1	172.6
87.5°	25.3	215.3	209.0	136.2	61.7	58.6
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)