

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: P196769

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196769
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
Description: NAVION ROADWAY AND AREA LUMINAIRE
(5) 70 CRI, 3000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II
ROADWAY OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 30475.7 lumens
Efficiency: N/A
Efficacy: 109.2 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 - G4

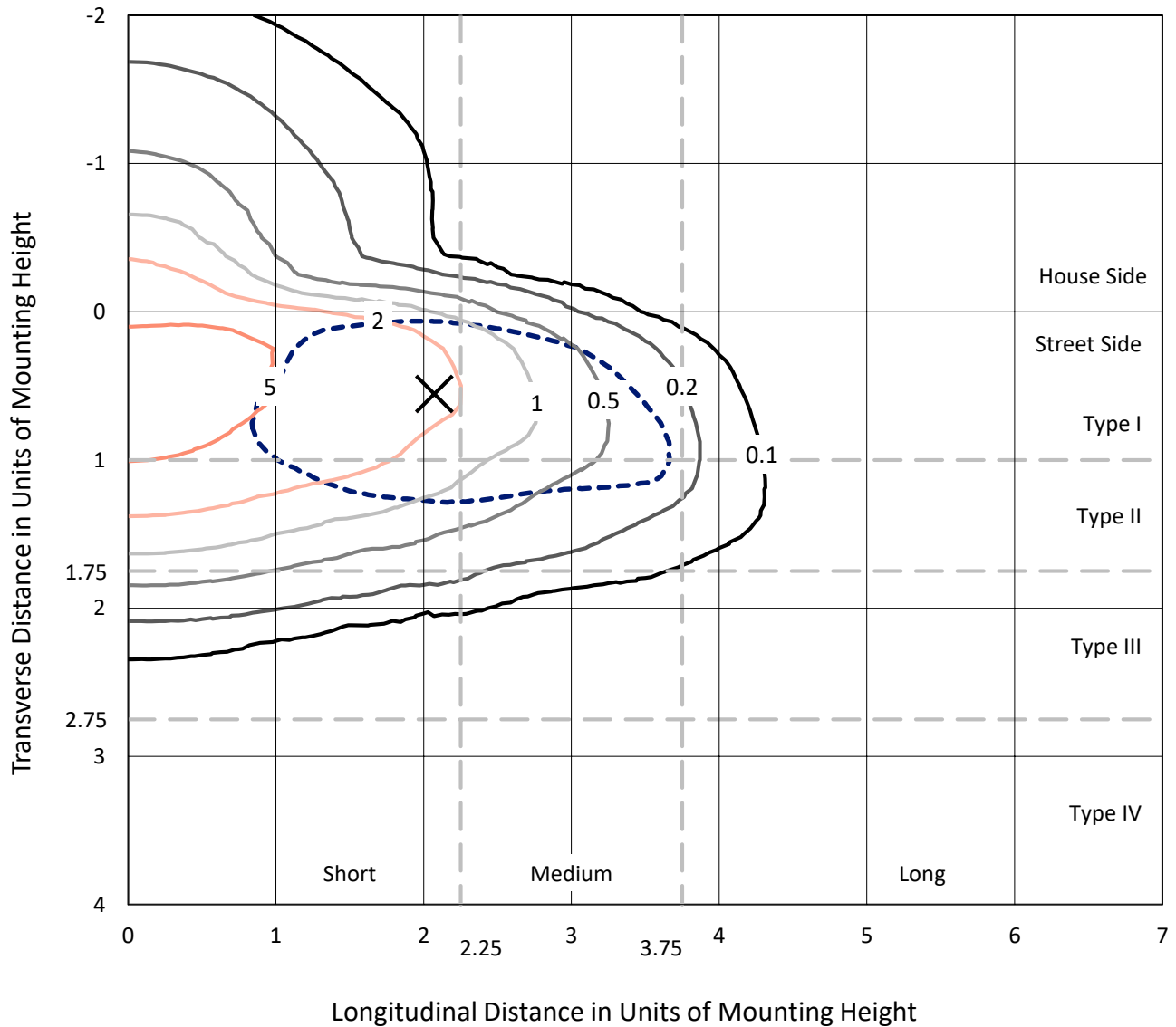
Input Watts (W): 279
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

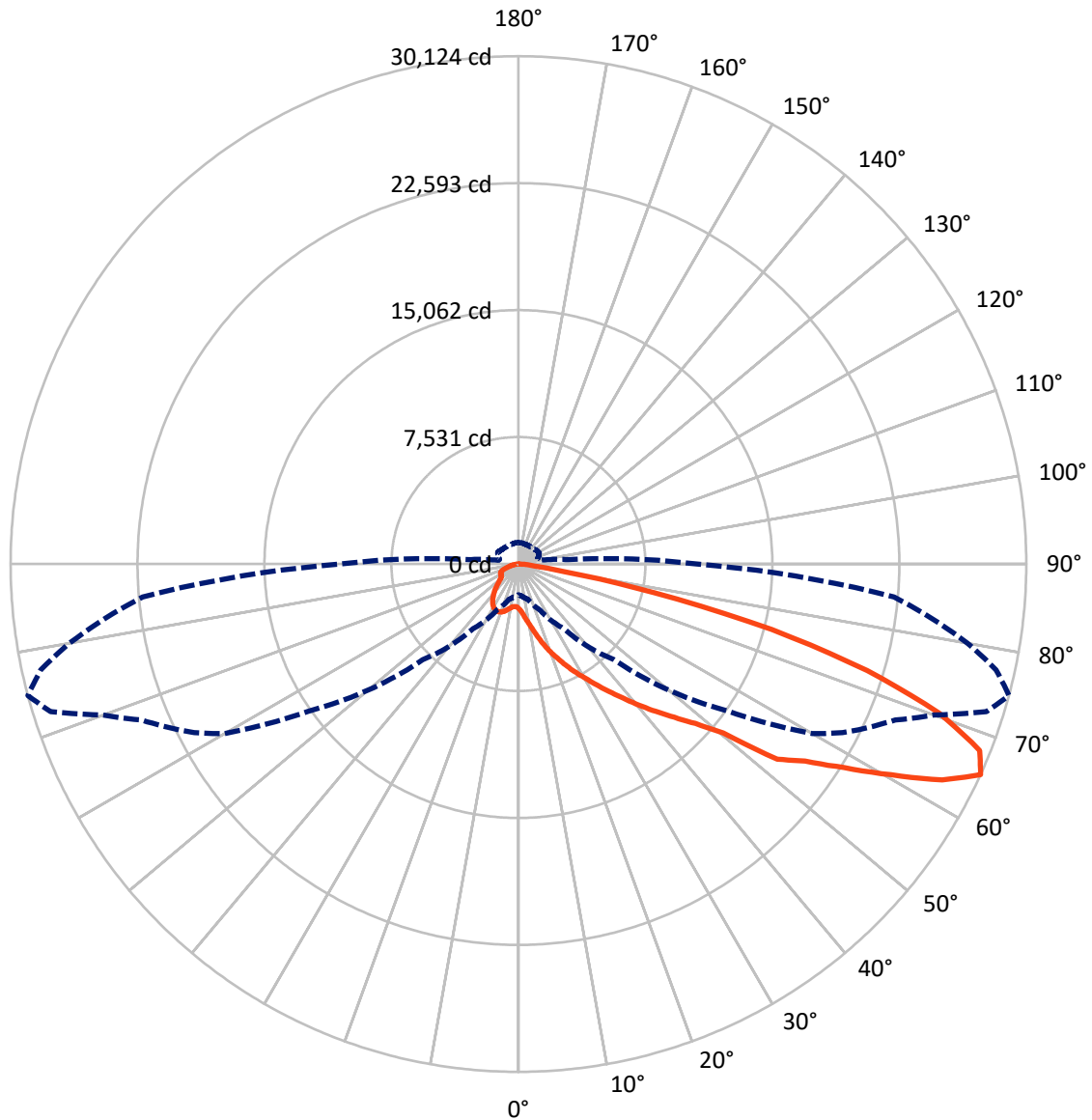
× Max cd
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 8.4 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	4579.4	0.0	4579.4
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	25896.3	0.0	25896.3
	% Fixture	85.0	0.0	85.0
Total	Lumens	30475.7	0.0	30475.7
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	311.7	1.0
10°-20°	1190.7	3.9
20°-30°	2402.9	7.9
30°-40°	4080.8	13.4
40°-50°	5691.7	18.7
50°-60°	6975.9	22.9
60°-70°	6563.3	21.5
70°-80°	2878.0	9.4
80°-90°	380.8	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°	30475.7	100.0
0°-180°	30475.7	100.0



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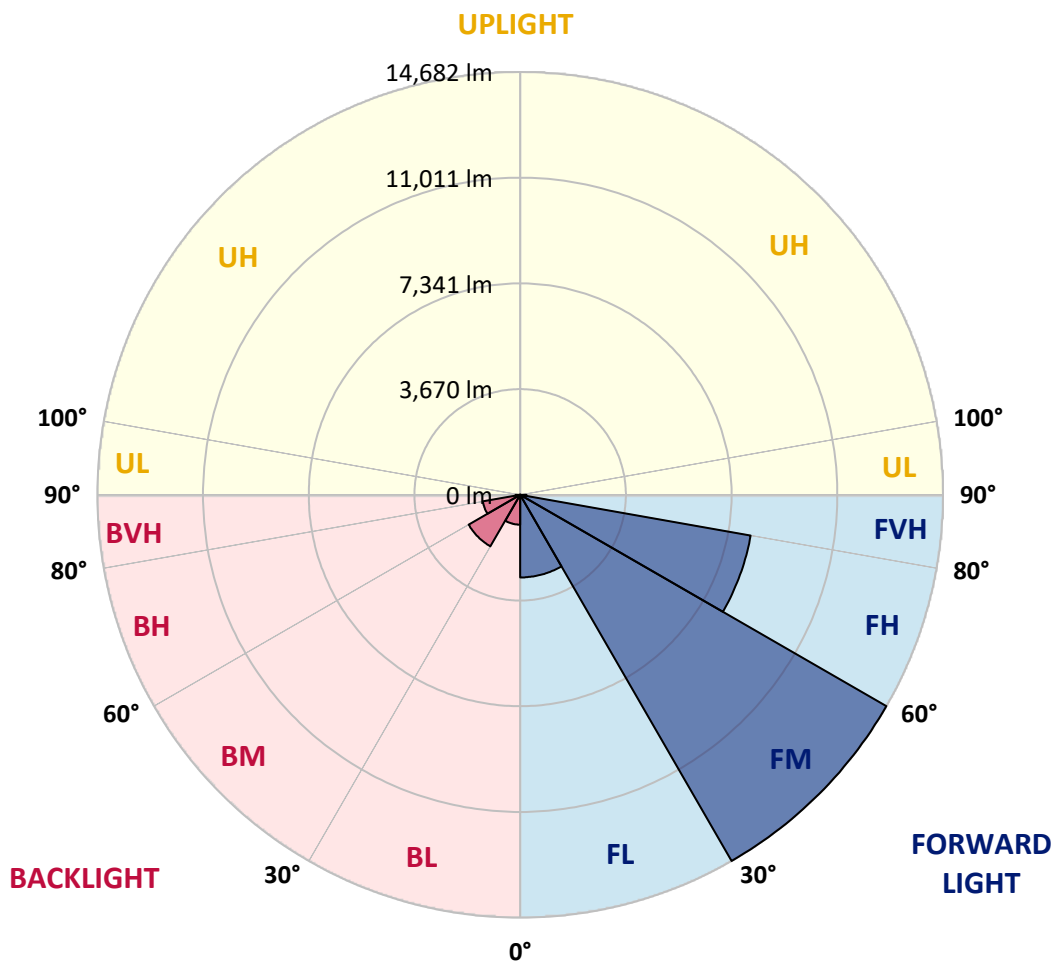
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	2868.6	9.4			
FM (30°-60°)	14681.8	48.2			
FH (60°-80°)	8125.1	26.7			G4/12000
FVH (80°-90°)	220.8	0.7			G2/225
BL (0°-30°)	1036.7	3.4	B3/2500		
BM (30°-60°)	2066.5	6.8	B2/2500		
BH (60°-80°)	1316.2	4.3	B3/2500		G3/2500
BVH (80°-90°)	160.1	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-G4

Type II Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	57.5°	60°	62.5°	65°
0°	2640.6	2640.6	2640.6	2640.6	2640.6	2640.6	2640.6	2640.6	2640.6	2640.6	2640.6
2.5°	3324.9	3286.1	3290.1	3235.7	3156.3	3069.0	2997.3	2958.5	2925.5	2915.8	2861.5
5°	4348.5	4300.1	4282.6	4158.5	3972.4	3751.4	3532.4	3447.0	3377.2	3334.6	3229.9
7.5°	5186.1	5160.9	5137.6	5023.2	4839.0	4556.0	4203.1	4077.1	3960.7	3832.9	3706.8
10°	5756.0	5746.4	5736.6	5657.2	5504.1	5257.8	4877.8	4740.2	4594.8	4431.9	4267.1
12.5°	6186.5	6186.5	6194.2	6128.3	6035.3	5845.3	5500.1	5372.2	5224.9	5054.3	4866.2
15°	6475.4	6483.1	6523.8	6543.2	6494.7	6372.5	6070.1	5957.7	5818.0	5649.5	5463.3
17.5°	6667.2	6682.8	6742.8	6806.9	6868.9	6826.2	6601.3	6496.7	6370.6	6215.5	6041.1
20°	7113.1	7093.7	7095.8	7076.2	7167.4	7200.4	7076.2	6989.1	6888.2	6746.8	6587.8
22.5°	8049.5	8012.7	7917.7	7675.4	7564.9	7553.2	7479.6	7433.0	7355.5	7266.3	7107.4
25°	9270.9	9228.2	9040.2	8640.9	8311.3	8006.8	7871.1	7842.1	7791.8	7731.6	7617.2
27.5°	10533.0	10486.4	10244.1	9740.1	9309.8	8695.2	8272.4	8233.8	8187.3	8162.0	8107.7
30°	11644.0	11593.5	11355.1	10843.2	10323.7	9590.8	8813.4	8677.7	8598.1	8606.0	8575.0
32.5°	12619.1	12574.5	12307.0	11785.5	11258.1	10546.6	9515.2	9303.9	9125.6	9059.7	9082.9
35°	13437.2	13396.5	13103.8	12578.4	12047.2	11455.9	10418.6	10100.7	9810.0	9627.7	9606.3
37.5°	13918.0	13894.8	13689.3	13243.5	12716.0	12281.8	11430.7	11077.8	10649.4	10383.8	10267.4
40°	13890.9	13916.2	13881.2	13679.6	13270.5	12954.6	12485.4	12136.4	11717.6	11322.1	11085.6
42.5°	13495.3	13530.3	13687.4	13792.1	13681.6	13489.5	13406.2	13146.4	12770.3	12351.5	12023.9
45°	12952.5	12983.6	13187.1	13565.2	13881.2	13935.5	14212.8	14082.9	13764.9	13408.2	13047.5
47.5°	12120.9	12181.0	12417.5	13018.5	13770.7	14294.2	14889.3	14949.4	14765.3	14470.7	14133.2
50°	10916.8	10996.4	11327.9	12182.9	13351.9	14662.5	15895.6	16124.3	16050.6	15752.0	15410.9
52.5°	9683.8	9763.4	10205.4	11114.6	12677.3	14813.7	16886.2	17471.7	17894.4	18202.6	18262.6
55°	8400.5	8489.7	8974.3	10021.3	11777.7	14621.8	17593.8	18258.9	18687.2	19009.2	19139.1
57.5°	6952.2	7053.0	7522.2	8580.7	10506.0	13850.1	18381.0	19323.1	19961.0	20457.3	20736.6
60°	5290.8	5416.7	5903.4	6969.6	8834.7	12372.8	18731.9	20125.8	21139.8	21884.2	22326.2
62.5°	3353.9	3482.0	3988.0	5095.0	6932.8	10354.7	17739.3	19772.9	21502.3	22603.4	23413.9
65°	1830.2	1886.4	2167.4	3001.2	4674.2	8034.1	15222.8	17621.0	20112.2	21672.8	22917.5
67.5°	1372.7	1380.4	1409.5	1613.0	2489.4	5424.5	11901.8	14098.4	16864.9	18873.5	20360.4
70°	1202.0	1202.0	1205.9	1207.9	1351.3	2939.1	8063.2	10085.1	12621.1	14652.9	16500.5
72.5°	1078.0	1066.3	1062.4	1039.2	1058.5	1506.3	4389.3	6205.8	8344.2	10624.2	12347.7
75°	930.6	928.6	928.6	905.4	917.0	1060.5	1903.9	2977.9	4635.5	6758.3	8454.7
77.5°	804.5	791.0	792.9	779.3	816.1	812.4	903.5	1227.2	2018.2	3549.9	4957.3
80°	663.1	653.4	659.2	651.4	709.5	601.0	608.8	750.3	1002.4	1556.8	2194.6
82.5°	490.5	494.4	531.2	527.2	597.1	405.3	445.9	560.3	674.6	775.5	843.4
85°	287.0	292.7	382.0	401.3	438.1	213.3	273.3	333.5	376.1	416.9	434.3
87.5°	31.0	40.8	213.3	219.1	195.8	64.0	110.5	139.7	149.2	159.0	139.7
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°	2640.6	2640.6	2640.6	2640.6	2640.6	2640.6	2640.6	2640.6	2640.6	2640.6	2640.6
2.5°	2844.1	2818.9	2791.8	2776.3	2749.1	2725.8	2683.2	2648.3	2609.5	2582.4	2570.8
5°	3177.6	3117.5	3053.5	3007.0	2948.8	2898.4	2801.4	2685.1	2648.3	2570.8	2551.3
7.5°	3611.8	3503.3	3394.6	3305.5	3204.7	3121.3	2958.5	2749.1	2721.9	2597.8	2570.8
10°	4121.7	3962.8	3801.7	3664.2	3516.8	3388.9	3148.6	2853.8	2824.7	2665.7	2638.6
12.5°	4691.7	4497.8	4290.4	4084.8	3910.4	3730.1	3402.5	3016.6	2970.1	2782.1	2745.2
15°	5279.1	5069.7	4829.4	4581.2	4366.0	4127.5	3714.6	3229.9	3144.6	2923.6	2873.2
17.5°	5858.8	5632.0	5379.9	5102.7	4850.7	4565.7	4051.9	3468.3	3321.1	3063.2	2999.1
20°	6419.1	6188.3	5922.7	5651.3	5337.4	5011.6	4397.0	3702.9	3478.0	3179.5	3096.1
22.5°	6929.0	6731.3	6465.6	6153.5	5835.5	5469.1	4748.0	3937.4	3615.7	3268.7	3162.1
25°	7466.0	7285.7	7022.0	6721.5	6351.2	5944.1	5110.5	4160.5	3726.2	3317.1	3185.4
27.5°	8008.8	7853.8	7605.5	7289.6	6892.2	6440.4	5478.8	4366.0	3815.5	3332.6	3173.7
30°	8588.6	8468.3	8239.6	7886.7	7485.4	6985.2	5880.2	4567.6	3871.6	3311.3	3121.3
32.5°	9137.2	9133.3	8929.8	8563.3	8131.0	7580.4	6302.7	4771.2	3900.7	3251.2	3030.2
35°	9707.1	9786.7	9633.5	9284.6	8828.9	8218.3	6770.0	4988.3	3902.6	3144.6	2912.0
37.5°	10354.7	10496.2	10428.4	10096.8	9618.0	8945.3	7318.6	5232.7	3891.0	2997.3	2739.4
40°	11091.4	11285.3	11283.3	11004.1	10492.3	9759.5	7956.5	5505.9	3863.9	2813.1	2535.8
42.5°	11934.7	12165.5	12229.4	11954.2	11436.5	10649.4	8687.4	5806.5	3821.3	2630.9	2320.6
45°	12900.2	13103.8	13223.9	12968.1	12448.5	11618.7	9526.9	6147.7	3768.9	2396.3	2074.4
47.5°	13933.5	14170.1	14350.3	14131.3	13576.9	12723.8	10521.4	6587.8	3749.4	2128.7	1808.8
50°	15215.0	15459.3	15849.0	15750.2	15445.8	14759.4	12624.9	7627.0	3757.2	1874.8	1585.9
52.5°	18394.6	18954.9	19447.3	19228.2	18505.0	17328.3	14334.9	8204.6	3594.4	1667.3	1430.8
55°	19354.1	19990.1	20717.0	20626.0	19931.9	18745.5	15686.2	8687.4	3437.3	1516.1	1330.0
57.5°	21033.2	21783.4	22799.3	22779.9	21928.8	20593.0	17425.2	9265.0	3369.4	1428.8	1279.5
60°	22810.9	23766.7	25170.4	25389.4	24464.7	23074.6	19480.3	9974.8	3379.2	1380.4	1250.5
62.5°	24109.9	25511.6	27553.0	28208.3	27118.8	25587.2	21612.8	10684.3	3321.1	1324.1	1215.6
65°	24189.4	26207.6	29104.1	30123.8	29020.7	27052.8	22365.1	10544.7	2972.1	1248.5	1159.4
67.5°	22250.6	24879.5	28398.3	29516.9	28388.7	26149.4	21046.7	9218.6	2415.6	1116.7	1062.4
70°	18532.2	21583.7	25236.2	26483.0	25550.4	23284.0	18317.0	7363.2	1805.0	942.3	917.0
72.5°	14321.2	17167.4	20484.5	21638.0	20924.6	18931.6	14447.4	5366.4	1289.3	763.8	744.5
75°	10238.3	12661.7	15069.7	15509.7	14805.9	12975.8	9373.7	3352.1	903.5	626.2	599.1
77.5°	6339.6	7915.9	8780.4	8214.3	7316.8	6081.8	3815.5	1655.8	601.0	509.9	482.7
80°	2813.1	3301.6	3082.5	2747.3	2169.5	1783.6	1165.1	734.8	387.8	393.6	378.0
82.5°	946.0	1000.4	973.3	967.4	872.4	763.8	494.4	318.0	217.1	252.1	246.3
85°	461.4	482.7	484.7	502.1	436.2	339.2	133.8	125.9	93.1	135.7	141.5
87.5°	139.7	141.5	128.0	139.7	112.4	77.6	25.2	34.9	17.5	33.0	33.0
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):

	105°	107.5°	110°	112.5°	115°	117.5°	120°	122.5°	125°	127.5°	130°
0°	2640.6	2640.6	2640.6	2640.6	2640.6	2640.6	2640.6	2640.6	2640.6	2640.6	2640.6
2.5°	2549.4	2541.7	2528.0	2512.5	2508.7	2489.4	2483.5	2473.8	2467.9	2458.4	2450.5
5°	2526.2	2512.5	2497.1	2479.6	2479.6	2452.5	2440.9	2429.2	2429.2	2411.8	2404.0
7.5°	2549.4	2532.0	2514.5	2499.0	2504.8	2473.8	2462.1	2450.5	2448.6	2431.1	2423.4
10°	2615.3	2597.8	2576.6	2561.0	2555.2	2530.0	2516.5	2499.0	2487.4	2475.7	2464.2
12.5°	2716.1	2692.9	2665.7	2632.8	2619.2	2597.8	2576.6	2553.3	2526.2	2514.5	2497.1
15°	2836.4	2797.6	2760.8	2720.0	2683.2	2661.9	2632.8	2595.9	2559.1	2543.5	2520.3
17.5°	2935.2	2894.5	2842.2	2793.6	2727.7	2710.2	2669.6	2625.1	2565.0	2559.1	2524.2
20°	3018.7	2956.5	2892.5	2834.4	2733.5	2724.0	2673.5	2621.1	2535.8	2535.8	2493.2
22.5°	3065.2	2979.8	2904.2	2826.6	2700.7	2692.9	2634.7	2572.7	2467.9	2471.9	2419.5
25°	3072.9	2970.1	2875.1	2782.1	2636.7	2623.1	2549.4	2481.6	2367.2	2359.5	2305.2
27.5°	3041.9	2921.6	2811.1	2698.7	2541.7	2512.5	2431.1	2349.7	2237.3	2217.9	2159.7
30°	2970.1	2828.6	2704.5	2574.5	2409.8	2363.3	2277.9	2194.6	2080.3	2055.0	2000.7
32.5°	2855.7	2694.8	2557.2	2427.3	2245.1	2186.9	2101.6	2018.2	1907.6	1888.3	1837.8
35°	2704.5	2524.2	2378.8	2241.1	2058.9	1998.8	1917.4	1843.7	1742.9	1735.1	1700.3
37.5°	2514.5	2326.4	2171.3	2039.6	1867.0	1836.0	1752.6	1698.3	1615.0	1622.7	1605.2
40°	2299.4	2107.4	1960.0	1843.7	1694.4	1667.3	1616.9	1576.2	1504.4	1525.8	1527.7
42.5°	2082.2	1890.3	1756.5	1651.8	1523.8	1506.3	1471.5	1448.2	1393.9	1436.5	1454.0
45°	1836.0	1657.6	1543.2	1463.7	1368.7	1368.7	1351.3	1349.4	1312.5	1372.7	1390.1
47.5°	1597.5	1457.9	1378.5	1330.0	1264.0	1295.0	1289.3	1304.8	1277.6	1339.6	1355.2
50°	1417.2	1320.3	1271.8	1248.5	1202.0	1250.5	1262.1	1283.5	1260.2	1314.5	1326.1
52.5°	1302.8	1238.9	1211.6	1205.9	1172.9	1233.0	1252.4	1271.8	1244.7	1295.0	1293.1
55°	1238.9	1196.2	1186.4	1198.1	1172.9	1231.2	1250.5	1264.0	1240.7	1275.7	1273.8
57.5°	1215.6	1192.3	1198.1	1215.6	1198.1	1246.6	1256.3	1271.8	1248.5	1264.0	1271.8
60°	1213.7	1213.7	1237.0	1260.2	1248.5	1283.5	1289.3	1287.3	1266.0	1268.0	1271.8
62.5°	1202.0	1231.2	1269.8	1306.7	1302.8	1345.4	1349.4	1324.1	1306.7	1287.3	1281.5
65°	1165.1	1213.7	1269.8	1320.3	1328.0	1393.9	1401.7	1376.4	1364.8	1331.9	1306.7
67.5°	1083.8	1145.8	1211.6	1273.8	1287.3	1376.4	1393.9	1403.7	1409.5	1388.1	1355.2
70°	946.0	1010.1	1078.0	1149.6	1169.1	1268.0	1304.8	1349.4	1384.2	1415.2	1403.7
72.5°	769.6	827.8	886.0	951.8	981.0	1083.8	1132.3	1209.7	1264.0	1343.6	1376.4
75°	610.6	645.6	680.4	721.2	744.5	845.2	905.4	998.4	1072.2	1182.6	1256.3
77.5°	480.8	498.2	515.7	533.1	542.8	599.1	647.6	740.6	825.9	965.6	1074.0
80°	370.3	380.0	382.0	387.8	383.8	411.1	428.4	484.7	558.4	696.0	824.0
82.5°	238.5	246.3	250.1	259.8	240.4	275.4	287.0	292.7	331.5	432.3	523.5
85°	133.8	135.7	137.6	141.5	114.4	149.2	151.3	141.5	137.6	178.3	201.6
87.5°	33.0	31.0	33.0	33.0	13.5	31.0	31.0	21.3	15.6	29.1	23.3
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°	2640.6	2640.6	2640.6	2640.6	2640.6	2640.6
2.5°	2433.1	2429.2	2431.1	2421.4	2417.6	2419.5
5°	2394.3	2386.5	2386.5	2380.8	2373.0	2373.0
7.5°	2411.8	2396.3	2390.5	2378.8	2367.2	2369.1
10°	2438.8	2411.8	2392.3	2375.0	2361.3	2361.3
12.5°	2456.3	2407.8	2378.8	2355.5	2340.0	2340.0
15°	2460.2	2386.5	2343.9	2318.7	2303.1	2303.1
17.5°	2436.9	2343.9	2289.6	2256.6	2239.3	2243.1
20°	2378.8	2264.4	2200.5	2165.5	2148.1	2150.0
22.5°	2287.7	2155.9	2082.2	2041.5	2024.0	2024.0
25°	2163.7	2020.1	1940.7	1907.6	1892.2	1892.2
27.5°	2022.1	1874.8	1805.0	1779.8	1770.0	1770.0
30°	1863.1	1740.9	1690.6	1673.1	1657.6	1657.6
32.5°	1729.3	1642.0	1624.6	1601.4	1560.7	1558.7
35°	1622.7	1613.0	1599.4	1529.6	1471.5	1463.7
37.5°	1564.6	1622.7	1537.4	1417.2	1370.6	1368.7
40°	1533.6	1587.7	1440.5	1382.3	1376.4	1376.4
42.5°	1459.8	1498.6	1434.7	1401.7	1401.7	1403.7
45°	1382.3	1415.2	1448.2	1419.2	1428.8	1430.8
47.5°	1328.0	1393.9	1448.2	1423.0	1442.4	1454.0
50°	1277.6	1374.6	1419.2	1419.2	1440.5	1442.4
52.5°	1266.0	1347.3	1392.0	1413.4	1415.2	1405.6
55°	1268.0	1326.1	1370.6	1397.9	1386.2	1386.2
57.5°	1266.0	1314.5	1353.1	1362.9	1368.7	1368.7
60°	1268.0	1299.0	1330.0	1326.1	1345.4	1345.4
62.5°	1273.8	1277.6	1293.1	1289.3	1318.3	1318.3
65°	1287.3	1250.5	1240.7	1244.7	1279.5	1277.6
67.5°	1312.5	1213.7	1182.6	1184.6	1234.9	1227.2
70°	1349.4	1163.3	1116.7	1105.0	1190.4	1176.8
72.5°	1361.0	1105.0	1031.4	1019.7	1070.2	1031.4
75°	1306.7	1058.5	940.2	901.5	880.2	868.5
77.5°	1165.1	1029.4	845.2	763.8	731.0	723.2
80°	965.6	969.3	721.2	624.3	725.1	723.2
82.5°	729.0	837.5	577.8	541.0	525.4	438.1
85°	352.8	630.1	443.9	372.2	223.0	211.3
87.5°	31.0	263.7	255.8	166.7	75.6	71.8
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)