

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: P195324

Luminaire Tested: **NAV-AF-06-D-UNV-T2R-7060-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195324
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-7060-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(6) 70 CRI, 5700K, 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: 30499 lumens
Efficiency: N/A
Efficacy: 122.5 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): 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

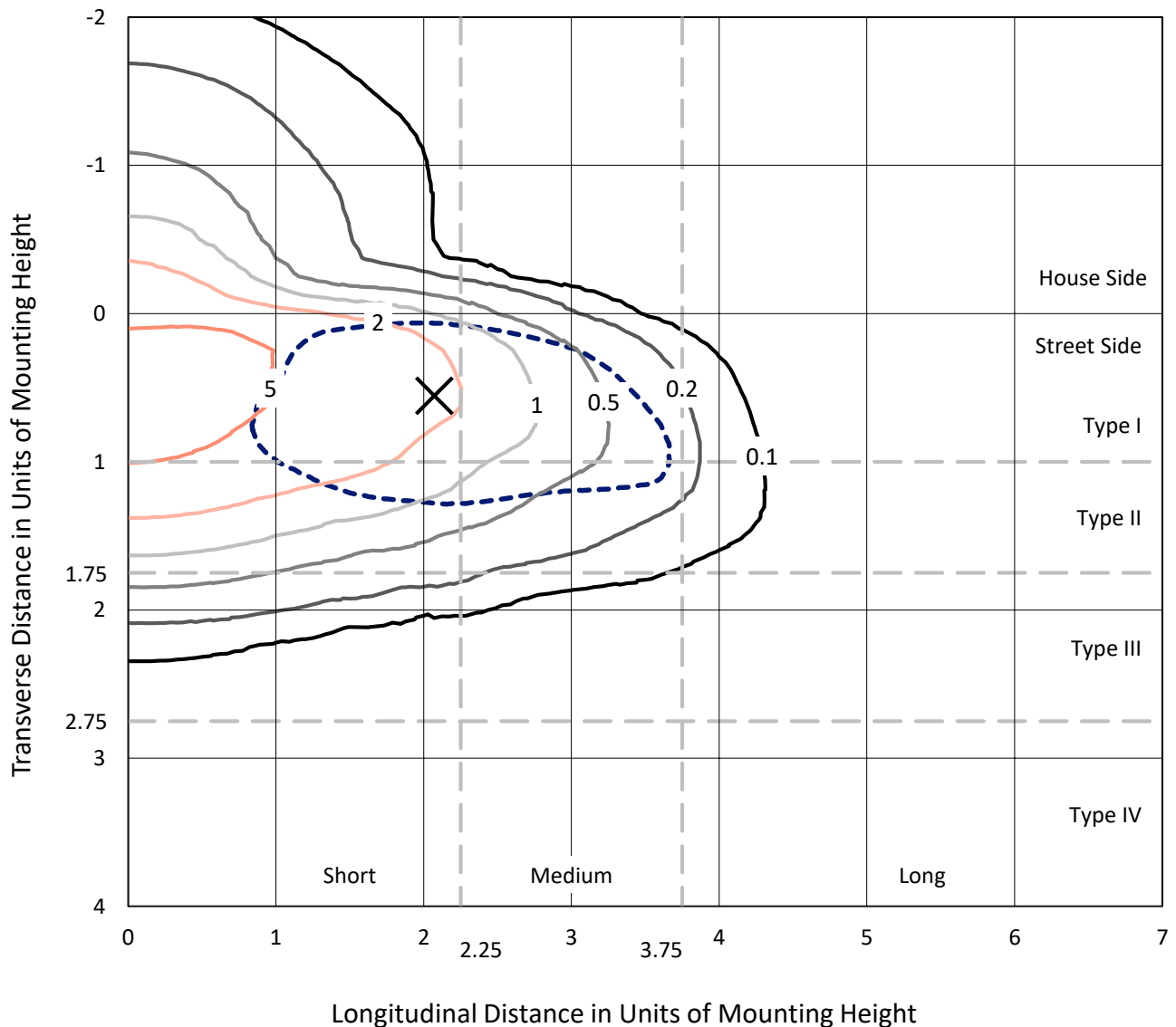


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Iso-Footcandle Lines of Horizontal Illumination

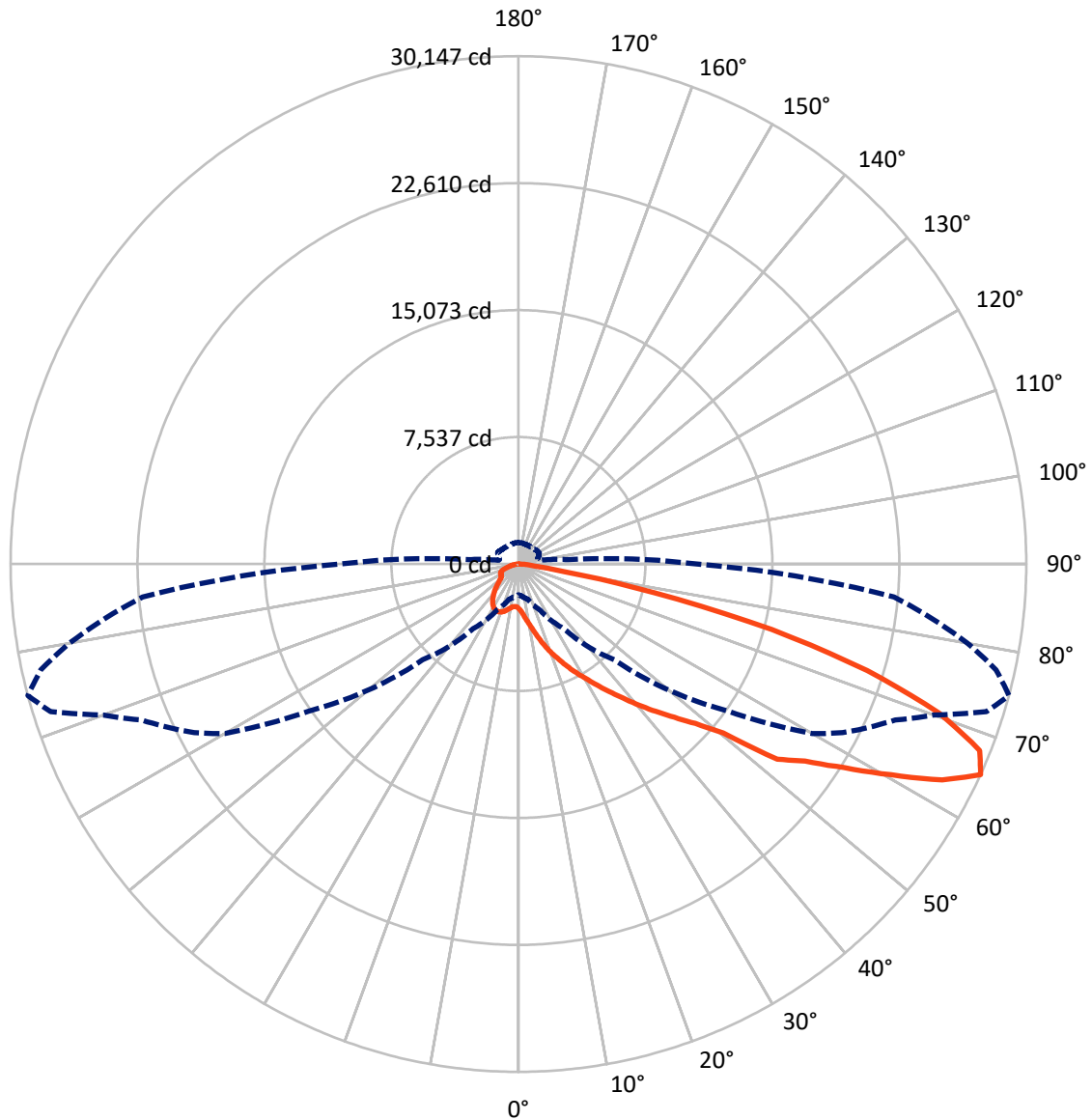
× Max cd
 - - - 1/2 Max cd



Based on 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	4582.9	0.0	4582.9
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	25916.0	0.0	25916.0
	% Fixture	85.0	0.0	85.0
Total	Lumens	30499.0	0.0	30499.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	312.0	1.0
10°-20°	1191.6	3.9
20°-30°	2404.7	7.9
30°-40°	4083.9	13.4
40°-50°	5696.0	18.7
50°-60°	6981.2	22.9
60°-70°	6568.3	21.5
70°-80°	2880.2	9.4
80°-90°	381.1	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°	30499.0	100.0
0°-180°	30499.0	100.0



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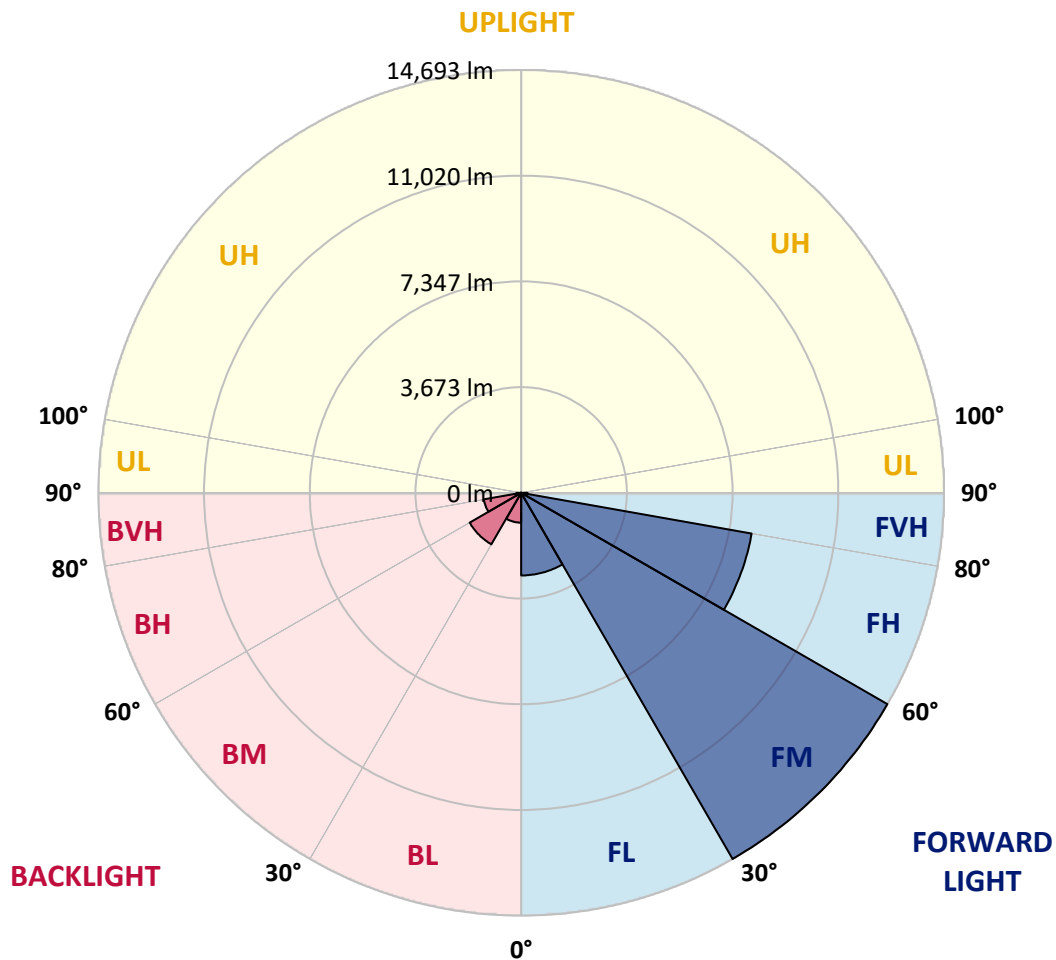
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	2870.8	9.4			
FM	(30°-60°)	14693.0	48.2			
FH	(60°-80°)	8131.3	26.7			G4/12000
FVH	(80°-90°)	220.9	0.7			G2/225
BL	(0°-30°)	1037.5	3.4	B3/2500		
BM	(30°-60°)	2068.1	6.8	B2/2500		
BH	(60°-80°)	1317.2	4.3	B3/2500		G3/2500
BVH	(80°-90°)	160.2	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°	2642.6	2642.6	2642.6	2642.6	2642.6	2642.6	2642.6	2642.6	2642.6	2642.6	2642.6
2.5°	3327.4	3288.6	3292.5	3238.2	3158.6	3071.3	2999.5	2960.7	2927.8	2918.1	2863.7
5°	4351.9	4303.4	4285.9	4161.7	3975.5	3754.3	3535.0	3449.7	3379.8	3337.1	3232.4
7.5°	5190.0	5164.8	5141.5	5027.1	4842.7	4559.5	4206.4	4080.2	3963.8	3835.8	3709.7
10°	5760.5	5750.8	5741.1	5661.5	5508.2	5261.8	4881.5	4743.8	4598.3	4435.3	4270.4
12.5°	6191.2	6191.2	6198.9	6133.0	6039.8	5849.7	5504.3	5376.3	5228.8	5058.1	4869.9
15°	6480.3	6488.0	6528.8	6548.2	6499.7	6377.4	6074.8	5962.2	5822.5	5653.7	5467.5
17.5°	6672.3	6687.9	6748.0	6812.0	6874.1	6831.4	6606.4	6501.6	6375.5	6220.3	6045.7
20°	7118.6	7099.2	7101.1	7081.7	7172.9	7205.9	7081.7	6994.4	6893.5	6751.9	6592.8
22.5°	8055.7	8018.8	7923.8	7681.2	7570.7	7559.0	7485.3	7438.7	7361.1	7271.9	7112.8
25°	9278.0	9235.3	9047.2	8647.5	8317.6	8013.0	7877.2	7848.1	7797.7	7737.5	7623.0
27.5°	10541.1	10494.5	10252.0	9747.6	9316.8	8701.8	8278.8	8240.0	8193.5	8168.2	8113.9
30°	11652.8	11602.4	11363.7	10851.5	10331.6	9598.2	8820.1	8684.3	8604.8	8612.5	8581.5
32.5°	12628.8	12584.1	12316.4	11794.5	11266.7	10554.7	9522.5	9311.0	9132.5	9066.6	9089.8
35°	13447.5	13406.8	13113.8	12588.0	12056.4	11464.6	10426.6	10108.4	9817.4	9635.0	9613.7
37.5°	13928.7	13905.4	13699.7	13253.5	12725.8	12291.2	11439.4	11086.3	10657.5	10391.7	10275.3
40°	13901.5	13926.8	13891.8	13690.0	13280.7	12964.4	12494.9	12145.6	11726.6	11330.8	11094.1
42.5°	13505.7	13540.7	13697.8	13802.6	13692.0	13499.9	13416.5	13156.5	12780.1	12361.0	12033.1
45°	12962.5	12993.5	13197.2	13575.6	13891.8	13946.2	14223.6	14093.6	13775.4	13418.4	13057.5
47.5°	12130.1	12190.3	12427.0	13028.4	13781.2	14305.1	14900.7	14960.9	14776.6	14481.6	14144.1
50°	10925.3	11004.8	11336.6	12192.2	13362.2	14673.7	15907.7	16136.6	16062.9	15764.1	15422.6
52.5°	9691.3	9770.8	10213.2	11123.2	12687.0	14825.1	16899.1	17485.1	17908.0	18216.5	18276.7
55°	8406.9	8496.1	8981.2	10028.9	11786.7	14633.0	17607.3	18272.8	18701.6	19023.7	19153.6
57.5°	6957.6	7058.4	7528.0	8587.3	10513.9	13860.8	18395.0	19338.0	19976.3	20473.0	20752.4
60°	5294.8	5420.9	5907.9	6975.0	8841.5	12382.4	18746.2	20141.2	21155.9	21901.0	22343.3
62.5°	3356.5	3484.6	3991.0	5098.8	6938.2	10362.6	17752.8	19788.1	21518.8	22620.8	23431.8
65°	1831.5	1887.8	2169.1	3003.4	4677.8	8040.2	15234.4	17634.5	20127.6	21689.5	22935.1
67.5°	1373.7	1381.4	1410.5	1614.2	2491.2	5428.7	11910.9	14109.1	16877.8	18887.8	20376.0
70°	1202.9	1202.9	1206.8	1208.7	1352.3	2941.3	8069.3	10092.9	12630.7	14664.0	16513.0
72.5°	1078.8	1067.1	1063.2	1039.9	1059.3	1507.5	4392.6	6210.6	8350.6	10632.3	12357.1
75°	931.3	929.4	929.4	906.1	917.7	1061.3	1905.3	2980.1	4639.0	6763.5	8461.2
77.5°	805.2	791.6	793.5	780.0	816.8	812.9	904.1	1228.1	2019.7	3552.5	4961.1
80°	663.5	653.8	659.7	651.9	710.1	601.5	609.2	750.9	1003.1	1558.0	2196.3
82.5°	490.9	494.8	531.6	527.7	597.6	405.5	446.2	560.7	675.2	776.1	844.0
85°	287.1	293.0	382.2	401.6	438.5	213.4	273.6	333.7	376.4	417.1	434.6
87.5°	31.0	40.7	213.4	219.2	196.0	64.0	110.6	139.7	149.4	159.1	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°	2642.6	2642.6	2642.6	2642.6	2642.6	2642.6	2642.6	2642.6	2642.6	2642.6	2642.6
2.5°	2846.3	2821.1	2793.9	2778.4	2751.2	2727.9	2685.2	2650.3	2611.5	2584.3	2572.7
5°	3180.0	3119.8	3055.8	3009.2	2951.0	2900.6	2803.6	2687.2	2650.3	2572.7	2553.3
7.5°	3614.6	3505.9	3397.3	3308.0	3207.1	3123.7	2960.7	2751.2	2724.0	2599.9	2572.7
10°	4124.9	3965.8	3804.7	3667.0	3519.5	3391.5	3150.9	2856.0	2826.9	2667.8	2640.6
12.5°	4695.3	4501.3	4293.7	4088.0	3913.4	3732.9	3405.1	3019.0	2972.4	2784.2	2747.3
15°	5283.2	5073.6	4833.0	4584.7	4369.3	4130.7	3717.4	3232.4	3147.0	2925.8	2875.4
17.5°	5863.3	5636.3	5384.1	5106.6	4854.4	4569.2	4055.0	3471.0	3323.6	3065.5	3001.5
20°	6424.0	6193.1	5927.3	5655.7	5341.4	5015.4	4400.4	3705.8	3480.7	3181.9	3098.5
22.5°	6934.3	6736.4	6470.6	6158.2	5840.0	5473.3	4751.5	3940.5	3618.5	3271.2	3164.5
25°	7471.7	7291.3	7027.4	6726.7	6356.1	5948.7	5114.4	4163.7	3729.1	3319.7	3187.7
27.5°	8015.0	7859.7	7611.4	7295.2	6897.4	6445.3	5483.0	4369.3	3818.3	3335.2	3176.1
30°	8595.1	8474.8	8245.8	7892.7	7491.1	6990.5	5884.6	4571.1	3874.6	3313.9	3123.7
32.5°	9144.2	9140.3	8936.6	8569.9	8137.2	7586.2	6307.6	4774.8	3903.7	3253.7	3032.5
35°	9714.6	9794.1	9640.9	9291.6	8835.7	8224.5	6775.2	4992.1	3905.6	3147.0	2914.2
37.5°	10362.6	10504.2	10436.3	10104.6	9625.3	8952.1	7324.3	5236.6	3894.0	2999.5	2741.5
40°	11099.9	11293.9	11292.0	11012.6	10500.4	9767.0	7962.6	5510.2	3866.8	2815.2	2537.8
42.5°	11943.9	12174.8	12238.8	11963.3	11445.2	10657.5	8694.0	5810.9	3824.1	2632.9	2322.4
45°	12910.1	13113.8	13234.1	12978.0	12458.0	11627.6	9534.1	6152.4	3771.7	2398.1	2076.0
47.5°	13944.2	14180.9	14361.4	14142.1	13587.2	12733.5	10529.5	6592.8	3752.3	2130.3	1810.2
50°	15226.7	15471.2	15861.1	15762.2	15457.6	14770.7	12634.6	7632.7	3760.1	1876.2	1587.1
52.5°	18408.6	18969.3	19462.1	19242.9	18519.2	17341.5	14345.8	8210.9	3597.1	1668.6	1431.9
55°	19369.0	20005.4	20733.0	20641.8	19947.2	18759.8	15698.2	8694.0	3440.0	1517.2	1331.0
57.5°	21049.2	21800.1	22816.7	22797.3	21945.6	20608.8	17438.5	9272.2	3372.1	1429.9	1280.5
60°	22828.4	23784.9	25189.6	25408.9	24483.4	23092.3	19495.1	9982.3	3381.8	1381.4	1251.4
62.5°	24128.3	25531.1	27574.1	28229.9	27139.5	25606.8	21629.3	10692.4	3323.6	1325.2	1216.5
65°	24207.9	26227.6	29126.3	30146.8	29042.8	27073.5	22382.1	10552.7	2974.3	1249.5	1160.2
67.5°	22267.7	24898.6	28420.0	29539.5	28410.3	26169.4	21062.8	9225.6	2417.5	1117.6	1063.2
70°	18546.4	21600.2	25255.6	26503.1	25569.9	23301.8	18331.0	7368.9	1806.3	942.9	917.7
72.5°	14332.3	17180.5	20500.1	21654.6	20940.6	18946.0	14458.4	5370.5	1290.2	764.4	745.0
75°	10246.2	12671.4	15081.2	15521.6	14817.3	12985.8	9380.9	3354.6	904.1	626.7	599.5
77.5°	6344.5	7921.8	8787.2	8220.6	7322.3	6086.4	3818.3	1656.9	601.5	510.3	483.1
80°	2815.2	3304.2	3084.9	2749.3	2171.1	1785.0	1166.1	735.3	388.0	393.9	378.3
82.5°	946.8	1001.1	974.0	968.2	873.1	764.4	494.8	318.2	217.3	252.2	246.4
85°	461.8	483.1	485.0	502.5	436.5	339.5	133.9	126.1	93.1	135.8	141.6
87.5°	139.7	141.6	128.1	139.7	112.5	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°	2642.6	2642.6	2642.6	2642.6	2642.6	2642.6	2642.6	2642.6	2642.6	2642.6	2642.6
2.5°	2551.4	2543.6	2530.0	2514.5	2510.6	2491.2	2485.4	2475.7	2469.9	2460.2	2452.4
5°	2528.1	2514.5	2499.0	2481.5	2481.5	2454.4	2442.7	2431.1	2431.1	2413.6	2405.8
7.5°	2551.4	2533.9	2516.4	2500.9	2506.7	2475.7	2464.1	2452.4	2450.5	2433.0	2425.2
10°	2617.3	2599.9	2578.5	2563.0	2557.2	2532.0	2518.4	2500.9	2489.3	2477.6	2466.0
12.5°	2718.2	2694.9	2667.8	2634.8	2621.2	2599.9	2578.5	2555.2	2528.1	2516.4	2499.0
15°	2838.5	2799.7	2762.8	2722.1	2685.2	2663.9	2634.8	2597.9	2561.1	2545.5	2522.3
17.5°	2937.5	2896.7	2844.3	2795.8	2729.9	2712.4	2671.7	2627.0	2566.9	2561.1	2526.1
20°	3020.9	2958.8	2894.8	2836.6	2735.7	2726.0	2675.5	2623.1	2537.8	2537.8	2495.1
22.5°	3067.5	2982.1	2906.4	2828.8	2702.7	2694.9	2636.7	2574.6	2469.9	2473.8	2421.4
25°	3075.2	2972.4	2877.3	2784.2	2638.7	2625.1	2551.4	2483.5	2369.0	2361.2	2306.9
27.5°	3044.2	2923.9	2813.3	2700.8	2543.6	2514.5	2433.0	2351.5	2239.0	2219.6	2161.4
30°	2972.4	2830.8	2706.6	2576.6	2411.7	2365.1	2279.7	2196.3	2081.8	2056.6	2002.3
32.5°	2857.9	2696.9	2559.1	2429.1	2246.8	2188.5	2103.2	2019.7	1909.2	1889.8	1839.3
35°	2706.6	2526.1	2380.6	2242.9	2060.5	2000.3	1918.9	1845.1	1744.2	1736.5	1701.6
37.5°	2516.4	2328.2	2173.0	2041.1	1868.4	1837.4	1753.9	1699.6	1616.2	1623.9	1606.5
40°	2301.1	2109.0	1961.5	1845.1	1695.7	1668.6	1618.1	1577.4	1505.6	1526.9	1528.9
42.5°	2083.8	1891.7	1757.8	1653.1	1525.0	1507.5	1472.6	1449.3	1395.0	1437.7	1455.1
45°	1837.4	1658.9	1544.4	1464.9	1369.8	1369.8	1352.3	1350.4	1313.5	1373.7	1391.1
47.5°	1598.7	1459.0	1379.5	1331.0	1265.0	1296.1	1290.2	1305.8	1278.6	1340.7	1356.2
50°	1418.3	1321.3	1272.8	1249.5	1202.9	1251.4	1263.1	1284.4	1261.1	1315.5	1327.1
52.5°	1303.8	1239.8	1212.6	1206.8	1173.8	1234.0	1253.4	1272.8	1245.6	1296.1	1294.1
55°	1239.8	1197.1	1187.4	1199.0	1173.8	1232.0	1251.4	1265.0	1241.7	1276.7	1274.7
57.5°	1216.5	1193.2	1199.0	1216.5	1199.0	1247.5	1257.2	1272.8	1249.5	1265.0	1272.8
60°	1214.6	1214.6	1237.8	1261.1	1249.5	1284.4	1290.2	1288.3	1267.0	1268.9	1272.8
62.5°	1202.9	1232.0	1270.8	1307.7	1303.8	1346.5	1350.4	1325.2	1307.7	1288.3	1282.5
65°	1166.1	1214.6	1270.8	1321.3	1329.0	1395.0	1402.8	1377.5	1365.9	1332.9	1307.7
67.5°	1084.6	1146.7	1212.6	1274.7	1288.3	1377.5	1395.0	1404.7	1410.5	1389.2	1356.2
70°	946.8	1010.8	1078.8	1150.5	1169.9	1268.9	1305.8	1350.4	1385.3	1416.3	1404.7
72.5°	770.3	828.5	886.7	952.6	981.7	1084.6	1133.1	1210.7	1265.0	1344.6	1377.5
75°	611.2	646.1	681.0	721.8	745.0	845.9	906.1	999.2	1072.9	1183.5	1257.2
77.5°	481.2	498.6	516.1	533.6	543.3	599.5	648.0	741.2	826.5	966.2	1074.9
80°	370.6	380.3	382.2	388.0	384.2	411.3	428.8	485.0	558.8	696.5	824.6
82.5°	238.6	246.4	250.3	260.0	240.6	275.5	287.1	293.0	331.8	432.7	523.9
85°	133.9	135.8	137.8	141.6	114.5	149.4	151.3	141.6	137.8	178.5	201.8
87.5°	33.0	31.0	33.0	33.0	13.6	31.0	31.0	21.3	15.5	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°	2642.6	2642.6	2642.6	2642.6	2642.6	2642.6
2.5°	2435.0	2431.1	2433.0	2423.3	2419.4	2421.4
5°	2396.1	2388.4	2388.4	2382.6	2374.8	2374.8
7.5°	2413.6	2398.1	2392.3	2380.6	2369.0	2370.9
10°	2440.8	2413.6	2394.2	2376.7	2363.2	2363.2
12.5°	2458.2	2409.7	2380.6	2357.3	2341.8	2341.8
15°	2462.1	2388.4	2345.7	2320.5	2305.0	2305.0
17.5°	2438.8	2345.7	2291.4	2258.4	2240.9	2244.8
20°	2380.6	2266.2	2202.1	2167.2	2149.7	2151.7
22.5°	2289.4	2157.5	2083.8	2043.0	2025.6	2025.6
25°	2165.3	2021.7	1942.1	1909.2	1893.6	1893.6
27.5°	2023.6	1876.2	1806.3	1781.1	1771.4	1771.4
30°	1864.5	1742.3	1691.9	1674.4	1658.9	1658.9
32.5°	1730.7	1643.3	1625.9	1602.6	1561.9	1559.9
35°	1623.9	1614.2	1600.7	1530.8	1472.6	1464.9
37.5°	1565.7	1623.9	1538.6	1418.3	1371.7	1369.8
40°	1534.7	1589.0	1441.6	1383.4	1377.5	1377.5
42.5°	1461.0	1499.8	1435.7	1402.8	1402.8	1404.7
45°	1383.4	1416.3	1449.3	1420.2	1429.9	1431.9
47.5°	1329.0	1395.0	1449.3	1424.1	1443.5	1455.1
50°	1278.6	1375.6	1420.2	1420.2	1441.6	1443.5
52.5°	1267.0	1348.4	1393.1	1414.4	1416.3	1406.6
55°	1268.9	1327.1	1371.7	1398.9	1387.2	1387.2
57.5°	1267.0	1315.5	1354.3	1364.0	1369.8	1369.8
60°	1268.9	1299.9	1331.0	1327.1	1346.5	1346.5
62.5°	1274.7	1278.6	1294.1	1290.2	1319.3	1319.3
65°	1288.3	1251.4	1241.7	1245.6	1280.5	1278.6
67.5°	1313.5	1214.6	1183.5	1185.5	1235.9	1228.1
70°	1350.4	1164.1	1117.6	1105.9	1191.3	1177.7
72.5°	1362.0	1105.9	1032.2	1020.5	1071.0	1032.2
75°	1307.7	1059.3	941.0	902.2	880.9	869.2
77.5°	1166.1	1030.2	845.9	764.4	731.5	723.7
80°	966.2	970.1	721.8	624.7	725.6	723.7
82.5°	729.5	838.2	578.2	541.3	525.8	438.5
85°	353.1	630.6	444.3	372.5	223.1	211.5
87.5°	31.0	263.9	256.1	166.9	75.7	71.8
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)